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# COURSE DESCRIPTIONS AND CURRICULA



A DOOR TO YOUR FUTURE - - -

**NORTHERN ESSEX COMMUNITY COLLEGE**  
**HAVERHILL, MASSACHUSETTS**

SPRING, 1972



1.

THE ASSOCIATE IN ARTS DEGREE - LIBERAL ARTS

The Liberal Arts Program is a transfer curriculum designed for students planning to continue their education at a four-year college or university. To broaden their educational base, students are required to take courses in communications and the sciences. Intermediate competency in a modern foreign language, and two years of natural science are mandatory. The course also includes seminars and the preparation of research papers. Counselors will help the student select electives leading to major and minor sequences in their chosen fields of specialization.

FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Finite Mathematics I	3
Science	4
Foreign Language	3
Social Science	3
	<u>16</u>

SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
*Mathematics	3
Science	4
Foreign Language	3
Social Science	3
	<u>16</u>

THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Literature I	3
Science	4
Foreign Language	3
Social Science	3
Elective	3
	<u>16</u>

FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Literature II	3
Science	4
Foreign Language	3
Social Science	3
Elective	3
	<u>16</u>

\*One of the following: Finite Mathematics II  
Statistics  
Elementary Functions

PREREQUISITES FOR ADMISSION Four years of high school English  
Two years of a modern foreign language  
Two years of high school mathematics  
One year of a laboratory science

2.

## THE ASSOCIATE IN ARTS DEGREE - GENERAL LIBERAL ARTS

The General Liberal Arts Program is designed for the student who has not yet decided upon the educational objectives best suited to his interests and potential. Maximum elective choice enables the student to explore different areas, and to spend more time discovering his abilities. One year of science is required. Students in this curriculum should consult regularly with counselors to assess and evaluate the electives selected.

FIRST SEMESTER		SECOND SEMESTER	
<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
English Composition I	3	English Composition II	3
Finite Mathematics I	3	*Mathematics	3
Science	4	Science	4
Social Science	3	Social Science	3
Elective	3	Elective	3
	16		16

THIRD SEMESTER		FOURTH SEMESTER	
<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Literature I	3	Literature II	3
Social Science	3	Social Science	3
Elective	3	Elective	3
Speech	3	Elective	3
Elective	3	Elective	3
	15		15

\*One of the following: Finite Mathematics II  
Statistics  
Elementary Functions

<u>PREREQUISITES FOR ADMISSION</u>	Four years of high school English Two years of high school mathematics One year of a laboratory science
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3.

THE ASSOCIATE IN SCIENCE DEGREE - ENGINEERING SCIENCE

The Engineering Science Program is designed to prepare the engineering student for transfer to a four-year college or university. This core curriculum has been developed in cooperation with the American Association for Engineering Education, and the engineering divisions of several four-year institutions. The core curriculum allows the student the opportunity to explore various engineering fields, and equips him to choose the field of specialization best suited to his interests and abilities. The fields of engineering include chemical, civil, electrical, industrial and mechanical engineering. A strong background in mathematics is required.

FIRST SEMESTER

SECOND SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
English Composition I	3	English Composition II	3
Advanced Trigonometry/Analytic Geometry - MA5661	4	Calculus I (Technical) MA5683	4
Elective	3	Graphics	2
General Chemistry I	4	Engineering Physics I	4
Speech	3	General Chemistry II	4
	<u>17</u>		<u>17</u>

THIRD SEMESTER

FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Calculus II (Technical) MA5684	4	Differential Equations MA5685	4
Engineering Mechanics I	3	Engineering Mechanics II	3
Engineering Physics II	4	Engineering Physics III	4
Literature I	3	Literature II	3
Networks I	4	Networks II	4
	<u>18</u>		<u>18</u>

PREREQUISITES FOR ADMISSION Two years of algebra  
 Geometry  
 Trigonometry  
 Physics or Chemistry

4.

THE ASSOCIATE IN SCIENCE DEGREE - ELECTRONIC TECHNOLOGY \*

The Electronic Technology Program is designed primarily to equip the student for employment (often as an Engineering Assistant) with immediately marketable skills in electronic technology. The curriculum concentrates on the development of complex, interdependent electronic techniques. Heavy emphasis is placed on the use of state-of-the-art devices, laboratory equipment, and the preparation of complete, analytical laboratory reports. A film program and field trips are included in the course. Recently, Bachelor of Arts in Technology programs have been developed nation-wide, and students who plan to continue their education at a four-year institution should consider these new programs.

FIRST SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
English Composition I	3	English Composition II	3
Algebra & Trigonometry	4	Advanced Algebra &	
Applied Physics I	4	Trigonometry	4
D. C. Circuits	4	Applied Physics II	4
Basic Concepts of Engineering	1	A. C. Circuits	4
Personal & Professional Development	0	Graphics	2
	<u>16</u>		<u>17</u>

THIRD SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Advanced Technical Mathematics I	4	Advanced Technical Mathematics II	3
Semiconductors	4	Electronics II	5
Electronics I	5	Electrical Measurements	4
Advanced Circuits	4	Applied Industrial Electronics	4
Elective (Liberal Arts)	3	Elective (Liberal Arts)	3
	<u>20</u>		<u>19</u>

PREREQUISITES Four years of high school English  
FOR ADMISSION Two years of algebra

\* This program will be replaced by the Electronic Technology Modular Program, an experimental program, during the 1971-1972 academic year.

THE ASSOCIATE IN SCIENCE DEGREE - ELECTRONIC TECHNOLOGY MODULAR

The Electronic Technology Modular Program primarily equips students for employment, often as Engineering Assistants. The curriculum develops complex, interdependent electronic techniques with heavy emphasis on use of state-of-the-art devices, laboratory equipment, and the preparation of complete, analytical laboratory reports. Modules of varying length and content allow the students to concentrate all of their efforts in a limited area of study at any given point during the first year. The modules allow full preparation for the advanced technical courses offered in the second year. A film program and field trips are included. Courses may be applied to Bachelor of Arts in Technology programs at four-year institutions.

FIRST and SECOND SEMESTERS

			Class-Lab Hrs.	Credit
<u>Module 1</u>	English Composition I Basic Concepts of Engineering Personal & Professional Development	2 weeks " "	6 20 10	* 1 0
<u>Module 2</u>	English Composition I Algebra & Trigonometry	4 weeks " "	12 80 76	* 4 4
<u>Module 3</u>	English Composition I Applied Physics I	4 weeks " "	12 76 76	* 4 4
<u>Module 4</u>	English Composition I D. C. Circuits	4 weeks " "	12 76 76	3 4 4
<u>Module 5</u>	English Composition II Advanced Algebra & Trigonometry	4 weeks " "	12 80 76	* 4 4
<u>Module 6</u>	English Composition II Applied Physics II	4 weeks " "	12 76 76	* 4 4
<u>Module 7</u>	English Composition II A. C. Circuits	4 weeks " "	12 76 76	* 4 4
<u>Module 8</u>	English Composition II Graphics	2 weeks " "	6 40	3 2 <hr/> 33

\*English Composition I is carried throughout the first semester series of modules and English Composition II is carried throughout the second semester series of modules. Credit for each of the courses is allowed at the end of the semester.

THIRD SEMESTER

FOURTH SEMESTER

Course	Credit	Course	Credit
Advanced Technical Mathematics I	4	Advanced Technical Mathematics II	3
Semiconductors	4	Electronics II	5
Electronics I	5	Electrical Measurements	4
Advanced Circuits	4	Applied Industrial Electronics	4
Elective (Liberal Arts)	<u>3</u>	Elective (Liberal Arts).	<u>3</u>
	20		19

PREREQUISITES  
FOR ADMISSION

Two years of algebra  
Four years of high school English

6.

THE ASSOCIATE IN SCIENCE DEGREE - COMPUTER TECHNOLOGY

The Computer Technology Program is designed primarily to prepare the student for employment opportunities with immediately marketable skills in data processing. Graduates have entered varied areas of computer technology, including programming, system analysis training programs and data processing management. The curriculum is based almost entirely on various skill techniques which are interdependent in their development and which are based on a strong background in mathematics, accounting and communications. The course includes field trips to computer installations. The college's computer facilities are used extensively for work shops. The program has transfer potential to four-year institutions, and students who plan to continue their education beyond the associate degree level should select their electives to fulfill the requirements for transfer of the four-year institution they choose.

FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Finite Mathematical Models I	3
Introductory Accounting I	3
Fundamentals of Digital Logic	3
Business Programming I	4
	<u>16</u>

SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
Finite Mathematical Models II	3
Introductory Accounting II	3
Speech	3
Scientific Programming	4
	<u>16</u>

THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Introduction to Statistics	3
Technical Writing	3
Elective	3
Assembly Programming	4
Elective (Liberal Arts)	3
	<u>16</u>

FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Elective	3
Business Programming II	4
Systems Development & Design	4
Advanced Programming	4
Elective (Liberal Arts)	3
	<u>18</u>

PREREQUISITES FOR ADMISSION Two years of algebra

### THE ASSOCIATE IN SCIENCE DEGREE - CIVIL TECHNOLOGY

The Civil Technology Program provides students with theoretical and practical knowledge and experience which trains them as qualified technicians in the surveying, layout, plans and specifications, designs, and supervisory areas of the growing construction field. Broad construction site experiences are part of the curriculum. The theory presented also prepares students interested in education beyond the associate degree level.

#### FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Algebra & Trigonometry	4
Graphics	2
Applied Physics I	4
Surveying I	4
	<u>17</u>

#### SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
Advanced Algebra & Trigonometry	4
Drawing for Civil Technology	1
Applied Physics II	4
Surveying II	4
Elective	<u>3</u>
	<u>19</u>

#### THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Advanced Technical Mathematics I	4
Mechanics for Civil Technology	3
Highway Engineering I	4
Sanitation	3
Elective	<u>3</u>
	<u>17</u>

#### FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Computer Applications to Civil Technology Problems	4
Soil Mechanics	3
Highway Engineering II	4
Building Materials	4
Elective	<u>3</u>
	<u>18</u>

#### PREREQUISITES FOR ADMISSION

Two years of algebra  
Geometry and trigonometry helpful,  
but not required

**THE ASSOCIATE IN SCIENCE DEGREE**  
**ACCOUNTING-BUSINESS MANAGEMENT-BUSINESS TRANSFER**

Curricula in Accounting, Business Management and Business Transfer are offered in the Department of Business. The first two semesters in all three programs are identical. This first year core of basic business and liberal arts course introduces the student to broad areas of business, and enables him to choose the particular business specialization best suited to his needs and abilities. The core curriculum also expands the student's general knowledge and understanding through selected liberal arts requirements.

**CORE CURRICULUM**

FIRST SEMESTER

SECOND SEMESTER

Course	Credit	Course	Credit
English Composition I	3	English Composition II	3
Introductory Accounting I	3	Introductory Accounting II	3
*Mathematics of Finance	3	*Business Statistics	3
Principles of Marketing	3	Speech	3
Principles of Sociology or Introduction to Psychology	3	Introduction to Psychology or Principles of Sociology	3
	15		15

\*A liberal arts mathematics course should be elected in place of Mathematics of Finance and Business Statistics by qualified students.

After successfully completing the courses in the core curriculum students may decide on a business program for the third and fourth semesters. When a program offers a wide choice of Business Electives, the student should select courses carefully, to build a strong background in a particular business field.

**BUSINESS AREAS**

The ACCOUNTING PROGRAM is designed to prepare the student to enter business, industry and government in the specialized accounting field

THIRD SEMESTER

FOURTH SEMESTER

Course	Credit	Course	Credit
Business Finance	3	Survey of Economics	3
Business Law	3	Personnel Management	3
Intermediate Accounting I	3	Intermediate Accounting II	3
Cost Accounting	3	Tax Accounting	3
*Man and His Environment	3	Elective	3
	15		15

\*Another science course may be elected in place of this requirement.

The BUSINESS MANAGEMENT PROGRAM will qualify graduates to enter business and industry in any of several areas. Via the choice of business electives, the student may direct his interest toward marketing, retailing, insurance, real estate or industrial management.

#### THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Business Finance	3
Business Law	3
Business Elective	3
Business Elective	3
Elective	3
	<u>15</u>

#### FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Survey of Economics	3
Personnel Management	3
Business Elective	3
Business Elective	3
*Man and His Environment	3
	<u>15</u>

\*Another science elective may be elected in place of this requirement.

#### THE BUSINESS ELECTIVES

Advertising	Principles of Real Estate
Credits and Collections	Tax Accounting
Retailing	Cost Accounting
Salesmanship	Industrial Management
Business Law II	Managerial Accounting
Principles of Insurance	Time and Motion Study
	Introduction to Data Processing

The BUSINESS TRANSFER PROGRAM is designed for students who plan to transfer to a four-year institution after completing the associate degree program. Students who enroll in this program must have demonstrated academic ability in the first two semesters, be recommended by the Chairman of the Department of Business, and be approved by the Dean of Students.

#### THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Principles of Economics I	3
Natural Science	4
*Elective	3
*Elective	3
*Elective	3
	<u>16</u>

#### FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Principles of Economics II	3
Natural Science	4
*Elective	3
*Elective	3
*Elective	3
	<u>16</u>

\*Electives should be chosen to fulfill the transfer requirements of the particular four-year institution the student plans to attend.

## THE ASSOCIATE IN SCIENCE DEGREE - EXECUTIVE SECRETARIAL

EXECUTIVE SECRETARIAL OPTION  
 LEGAL OPTION  
 MEDICAL OPTION  
 TECHNICAL OPTION

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The Executive Secretarial Program, with legal, medical and technical options, is designed to help students develop superior secretarial skills and abilities in business decision-making and problem-solving activities. The curriculum offers a balanced program of academic and occupational courses leading to specialization in secretarial positions on the administrative and executive levels. The college-trained secretary finds a wide variety of opportunities in every business and in every profession. The purpose of the legal option is to prepare students for responsible positions in the legal field. The medical option provides preparation for work in doctors' offices and in other businesses directly related to medical practice. The purpose of the technical option is to enable students to acquire the knowledges and skills needed for employment as secretaries in technical offices relating to the science or engineering fields. Business tours, field trips, and demonstrations of innovations in office equipment are available.

CORE CURRICULUM

## FIRST SEMESTER

## SECOND SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
English Composition I	3	English Composition II	3
Mathematics of Business	3	Elements of Accounting	3
*Shorthand I, II or III	3	Shorthand II, III or IV	3
*Typewriting I, II or III	3	Typewriting II, III or IV	3
Elective (Liberal Arts)	3	Introduction to Psychology	3
	<u>15</u>		<u>15</u>

\*Entering freshmen should choose appropriate course after consultation with counselor or departmental advisor.

EXECUTIVE SECRETARIAL OPTION

## THIRD SEMESTER

## FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Shorthand III, IV or V	3	Shorthand IV, V or Secretarial Science Elective	3
Secretarial Procedures I	3	Business Law	3
Typewriting III or Elective	3	Speech	3
Office Machines	1	Elective (Liberal Arts)	3
Elective (Science)	3-4	Elective	3
Literature	3		
	<u>16-17</u>		<u>15</u>

11.

LEGAL OPTION

THIRD SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Shorthand III, IV or V	3	Legal Dictation and	
Business Law I	3	Transcription	3
Legal Stenography	3	Business Law II	3
Secretarial Procedures I	3	Speech	3
Typewriting III or Elective	3	Elective (Liberal Arts)	3
Office Machines	1	Elective (Science)	<u>3-4</u>
	<u>16</u>		<u>15-16</u>

MEDICAL OPTION

THIRD SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Shorthand III, IV or V	3	Shorthand IV or Secre-	
Secretarial Procedures I	3	tarial Science Elective	3
Office Machines	1	Medical Sec'l Procedures	3
Typewriting III or Secre-		Medical Dictation &	
tarial Science Elective	3	Transcription	3
Medical Terminology	3	Speech	3
Elective (Science)	<u>3-4</u>	Elective (Liberal Arts)	<u>3</u>
	<u>16-17</u>		<u>15</u>

TECHNICAL OPTION

THIRD SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Shorthand III, IV or V	3	Technical Dictation &	
Technical Stenography	3	Transcription	3
Secretarial Procedures I	3	Technical Typewriting	3
Office Machines	1	Speech	3
Typewriting III or Elective	3	Elective (Liberal Arts)	3
Elective (Science)	<u>3-4</u>	Elective	<u>3</u>
	<u>16-17</u>		<u>15</u>

12.

THE ASSOCIATE IN SCIENCE DEGREE - NURSING HOME and SMALL HOSPITAL ADMINISTRATION

The Nursing Home and Small Hospital Administration Program prepares the student with skills in the various aspects of institutional management including finance, facilities and equipment, planning and construction, services, health standards and record keeping. The development of a comprehensive view of health care, and an understanding of the role of the nursing home in society, is emphasized. The course includes the internship period in an approved institution.

FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Introductory Accounting I	3
Principles of Economics	3
Introduction to Psychology	3
Principles of Nursing Home Administration I	3
	<u>15</u>

SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
Introductory Accounting II	3
Speech	3
Food Services and Nutrition	3
Mathematics of Finance	3
	<u>15</u>

THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Nursing Home Plant Planning	3
Business Law I	3
Office Machines	1
Gerontology	3
Biology	4
	<u>16</u>

FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Personnel Management	3
Medico-Legal Standards	3
Internship	
(Administration)	4
Principles of Nursing Home Finance	3
	<u>16</u>



THE ASSOCIATE IN SCIENCE DEGREE - CHILD CARE

The Child Care Program instructs students in the principles and theory of child development, and in the principles, theory and practices of early childhood education, to train them as teaching and child care assistants for pre-school children interacting in a group situation. The curriculum includes an integrated practical experience component which allows students to immediately apply new skills and knowledge in real situations.

FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Introduction to Psychology	3
Integrated Science I	4
Introduction to Child Care Techniques	3
*Children's Literature	3
Observation and Recording of Child Behavior	1
	<u>17</u>

SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
Child Psychology	3
Integrated Science II	4
Problems in Early Childhood Education	3
Introduction to Creative Experience	3
Laboratory in Program Design	2
	<u>18</u>

\*This course does not satisfy the literature requirements of the Liberal Arts or General Liberal Arts programs.

THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Principles of Sociology	3
Speech	3
Emotional Disturbances of Childhood	3
*Laboratory in Child Care Education I	3
Physical Education and Recreation Activities	1
Media Workshop	1
Elective	3
	<u>17</u>

FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Seminar in the Philosophy of Child Care	3
Developmental Pre-school Mathematics	3
*Laboratory in Child Care Education II	6
**Elective	3
	<u>15</u>

\*Clinical Experience

\*\*It is suggested that one of the following courses be elected, depending upon the student's area of special interest:

Contemporary Social Problems  
Social Psychology  
Abnormal Psychology



THE ASSOCIATE IN SCIENCE DEGREE - NURSING

The Nursing Program is designed to provide sound training in nursing theory and nursing skills. Clinical instruction, and experience in affiliated hospitals, follows the highest national and state standards for excellence. Liberal arts courses are included to develop the best potential of the student. Graduates are prepared to write the Massachusetts State Licensing Examinations for qualification as registered nurses. Both male and female applicants, married or single, are considered for this program. Satisfactory performance must be required in all nursing and laboratory courses.

## FIRST SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Nursing I	8	Nursing II	8
Anatomy & Physiology I	4	Anatomy & Physiology II	4
English Composition I	3	English Composition II	3
Introduction to Psychology	3	Marriage & the Family	3
	18		18

## THIRD SEMESTER

## FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Nursing III	8	Nursing IV	10
Principles of Sociology	3	Seminar on Nursing	3
Speech	3	*Elective (Social Science)	3
Microbiology	4		16
	18		

\*One of the following: Contemporary Social Problems

Social Psychology

Adolescent Psychology

Abnormal Psychology

Child Psychology

PREREQUISITES  
FOR ADMISSION

- Four years of high school English
- Two years of science (one must be a laboratory course in chemistry)
- Two years of mathematics (at least one year of algebra)
- Two years of social science

THE ASSOCIATE IN SCIENCE DEGREE - MEDICAL RECORD TECHNOLOGY

The Medical Record Technology Program provides the student with the skills and techniques required to enter the administrative areas of the health professions. The curriculum provides a wide opportunity for intellectual development through electives. The technical courses emphasize the preparation, maintenance and analysis of medical reports, records and studies. Graduates are prepared to write an examination for national accreditation. Students who wish to continue their education in a four-year institution should select electives which fill the transfer requirements of the institution of their choice.

## FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Anatomy & Physiology I	4
Medical Terminology	3
Medical Record Science I	3
*Typing I or Elective	3
	<u>16</u>

## SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
Anatomy & Physiology II	4
Medical Record Science II	3
Directed Practice I	2
#Group B Elective	3
	<u>15</u>

## THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Medical Record Science III	3
Directed Practice II	4
Social Science	3
Elective (Liberal Arts)	3
**Group A Elective	3
	<u>16</u>

## FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Medical Record Seminar	1
Directed Practice III	4
#Group B Elective	3
**Group A Elective	3
Elective (Liberal Arts)	3
Elective	3
	<u>17</u>

\*Students able to type 45 WPM will be exempt from Typing I.

**\*\*Group A Electives:** Select one course from each group

Personnel Management  
Time and Motion Study

Basic Computing Machines  
Introduction to Data Processing

**#Group B Electives:** Select one of the two-course groups  
(Take introductory courses during the first year)

Introduction to Psychology  
Social Psychology

Principles of Sociology  
Contemporary Social Problems

THE ASSOCIATE IN SCIENCE DEGREE - INHALATION THERAPY TECHNOLOGY

The Inhalation Therapy Technology Program provides theoretical background and practical skills in the application, under medical supervision, of inhalation therapy to patients; and in the use and maintenance of inhalation therapy equipment. Clinical experience is provided by the use of the equipment and organizational facilities of affiliated hospitals. Students who successfully complete this program are prepared to sit for the examination administered by the American Association for Inhalation Therapy for registration as Registered Inhalation Therapists.

## FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Finite Mathematics I	3
Integrated Science I	4
Introduction to Psychology	3
Respiratory Therapy I	3
	<u>16</u>

## SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
Elective (Liberal Arts)	3
Integrated Science II	4
Elective (Liberal Arts)	3
Respiratory Therapy II	3
	<u>16</u>

SUMMER SESSION

Required ten-week term of clinical experience under medical supervision, as employee of affiliate hospital.

## THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Respiratory Therapy III	4
Respiratory Physiology	3
pH and Blood Gas Analysis	3
Seminar I	3
Elective (Liberal Arts)	3
	<u>16</u>

## FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Respiratory Therapy IV	4
Clinical Spirometry	3
Respiratory Intensive Care	4
Seminar II	3
Elective (Liberal Arts)	3
	<u>17</u>

## ONE-YEAR PROGRAM

CERTIFICATE PROGRAM - INHALATION THERAPY TECHNOLOGY

The Inhalation Therapy Technology Certificate Program prepares students for an examination which is administered by the American Registry of Inhalation Therapists and receipt of a Certificate of Competence for proficiency in performing lower level technical functions within the allied medical specialty, inhalation therapy. The curriculum of this one-year program concentrates on the technical skills necessary to assist inhalation therapists, doctors and nurses in the administration of special services related to respiratory treatment.

## FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Integrated Science I	3
Respiration Therapy I	3
Respiration Therapy II	3
Respiratory Physiology	3
	<u>15</u>

## SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
Integrated Science II	3
Respiratory Therapy III	3
Respiratory Therapy IV	3
Seminar for Technicians	3
Elective	3
	<u>15</u>

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### THE ASSOCIATE IN SCIENCE DEGREE - RADIOLOGIC TECHNOLOGY

The Radiologic Technology Program prepares students with the theoretical knowledge and practical skills necessary to take the National Board Examination sponsored by the American Registry of Radiological Technologists to qualify for employment in the allied medical specialty, x-ray or radiologic technology. The curriculum combines classroom courses with clinical experience in selected and approved area hospitals.

#### FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Anatomy & Physiology I	4
Radiologic Science I	3
Finite Mathematics I	3
Radiologic Orientation I	4
	<u>17</u>

#### SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
Anatomy & Physiology II	4
Radiologic Science II	3
Finite Mathematics II	3
Radiologic Orientation II	4
	<u>17</u>

#### SUMMER PRACTICUM

Ten week summer practicum  
in approved area hospital - 2 credits

#### THIRD SEMESTER

#### FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>	<u>Course</u>	<u>Credit</u>
Introduction to Psychology	3	Elective (Social Science)	3
*Elective	3	*Elective	3
Elective (Liberal Arts)	3	Elective	3
Radiologic Technology I	3	Radiologic Technology II	3
Principles of Radiologic Technology I	4	Principles of Radiologic Technology II	4
	<u>16</u>		<u>16</u>

\*Students who have sufficient academic proficiency  
are advised to consider some of the four-credit  
courses as electives.

## The Division of Continuing Education

THE ASSOCIATE IN SCIENCE DEGREE - BANKING

The Banking Program is an additional program within the Department of Business offered through the Division of Continuing Education only. It has been developed in conjunction with the Merrimack Valley Chapter, American Institute of Banking through its Educational Committee. The program is primarily for those presently employed in banking. The courses parallel courses offered by the American Institute of Banking. A student is able to work towards American Institute of Banking certificates while completing requirements for the associate degree. The program provides the student with a broad academic background, business management training and the fundamentals of banking management.

## FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Introductory Accounting I	3
Mathematics of Finance	3
Survey of Economics	3
Principles of Bank Operations or	3
Savings & Time Deposit Banking	<u>15</u>

## SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
Introduction to Psychology or	3
Principles of Sociology	3
Speech	3
Money and Banking	3
Introductory Accounting II	<u>3</u>

## THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Business Law I	3
Elective (Liberal Arts)	3
Personnel Management	3
*Banking Elective	3
*Banking Elective	<u>3</u>

## FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Business Law II	3
Elective (Liberal Arts)	3
Elective	3
Bank Management	3
**Bank Elective	<u>3</u>

\*Third semester banking electives

Credit Administration  
Home Mortgage Lending  
Installment Credit  
Trust Department Services

\*\*Fourth semester banking electives

Analyzing Financial Statements  
Bank Letters and Reports  
Bank Public Relations & Marketing  
Fundamentals of Data Processing

(Any third semester banking elective not previously chosen may be selected)

## The Division of Continuing Education

THE ASSOCIATE IN SCIENCE DEGREE - LAW ENFORCEMENT

The Law Enforcement Program is designed to provide specialized training for police personnel, and others, interested in preparation for careers in municipal, state, federal and private law enforcement and investigation work. The curriculum reflects the values, goals and problems of the total criminal justice system with emphasis on technical and educational aspects, rather than training aspects. Students, upon successful completion of the program, may transfer to a four-year institution offering a baccalaureate degree in Law Enforcement. All law enforcement courses in this program are offered in the Division of Continuing Education only.

## FIRST SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition I	3
Introduction to Psychology or	3
Principles of Sociology	3
Criminal Law	3
Introduction to Criminal Justice	3
State & Local Government	3
	<u>15</u>

## SECOND SEMESTER

<u>Course</u>	<u>Credit</u>
English Composition II	3
Principles of Sociology or	3
Introduction to Psychology	3
Law Enforcement Planning & Management	3
Introduction to Criminology	3
*Elective	3
	<u>15</u>

## THIRD SEMESTER

<u>Course</u>	<u>Credit</u>
Speech	3
Finite Mathematics I	3
Police Operations	3
Criminal Investigation	3
*Elective	3
	<u>15</u>

## FOURTH SEMESTER

<u>Course</u>	<u>Credit</u>
Man & His Environment	3
Civil Rights & Liberties or	3
Federal Government	3
Criminal Procedures	3
Introduction to Crimi- nalistics	3
*Elective	3
	<u>15</u>

\*Students planning to transfer to a college offering a baccalaureate degree in Law Enforcement should consult course requirements of that institution before selecting an elective.

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COURSES

SPRING, 1972

AC6601 Introductory Accounting I

A one-semester course; three credit hours. The basic concepts of accounting and uses of accounting data. Topics include the theory of debit and credit, use of journals and ledgers, analysis and recording of financial transactions, the accounting cycle, deferrals, accruals, inventories, fixed assets, voucher system and payroll. Four class hours per week.

AC6602 Introductory Accounting II

A one-semester course; three credit hours. A continuation of AC6601. Emphasis on accounting for partnerships, corporations, basic cost accounting and cost relationships, and special reports and statements. Four class hours per week.

Prerequisite: AC6601

AC6651 Intermediate Accounting I

A one-semester course; three credit hours. The detailed study of accounting theory and practice as it pertains to the accounting process, cash, receivables, inventories and current liabilities. Three class hours per week.

Prerequisite: AC6602

AC6652 Intermediate Accounting II

A one-semester course; three credit hours. A continuation of AC6651 with emphasis on non-current assets and liabilities, stockholders equity, and various statements. Three class hours per week.

Prerequisite: AC6651

AC6661 Managerial Accounting

A one-semester course; three credit hours. A study of the analysis of accounting data, rather than the collecting and recording function. The use of accounting as a basis for managerial supervision and planning. Three class hours per week.

Prerequisite: AC6602

AC6671 Cost Accounting

A one-semester course; three credit hours. An intensive study of cost methods; costing for materials, labor and factory overhead. Job-order process, direct costing and the use of standards. Three class hours per week.

Prerequisite: AC6602

**AC6682 Tax Accounting**

A one-semester course; three credit hours. An introduction to the principles of federal taxation with emphasis on history of income taxation, gross income, deductions, exemptions, accounting records, preparation and filing of tax returns. Three class hours per week.

Prerequisite: AC6602

**AC6691 Elements of Accounting I**

A one-semester course; three credit hours. Study of current accounting terminology. Introduction to the basic principles and practices of accounting. Topics include: Double-entry system and the accounting equation, journals, ledgers, trial balances, work sheets, financial statements, cash and banking procedures, and payroll records. Four class hours per week.

**AC6692 Elements of Accounting II**

A one-semester course; three credit hours. A continuation of Elements of Accounting I. Four class hours per week.

**BI5511 Introductory Biology - Botany**

A one-semester course; four credit hours. An introductory biology course based on the study of plants. The lectures include a gross and microscopic survey of plant anatomy from algae to the higher vascular plants noting the evolutionary trends, their economic relationship with man, and the fundamentals of physiology and morphology of the higher vascular plants. Three one-hour lectures and one two-hour laboratory period per week.

Prerequisite: A high school biology course and/or permission of the instructor.

**BI5513 Introductory Biology - Invertebrate Zoology**

A one-semester course; four credit hours. An introductory biology course oriented to invertebrate animals. The relation of the invertebrate animals to their environment and to man as indicated by their structure, physiology, natural history and evolution. Field trips and laboratory work emphasize identification and structural forms of the nearby lakes and ocean. Three one-hour lectures and one two-hour laboratory period per week.

Prerequisite: A high school biology course and/or permission of the instructor.

**BI5515 Introductory Biology - Vertebrate Zoology**

A one-semester course; four credit hours. An introductory biology course oriented to vertebrate animals. A study of the vertebrate animals in relation to their structure, adaptations, evolution, and natural history. Their relationships to the lower animals and to man. Three one-hour lectures and one two-hour laboratory period per week.

Prerequisite: A high school biology course and/or permission of the instructor.

**BI5519 Anatomy and Physiology I**

A one-semester course; four credit hours. Human anatomical structures and physiological systems will be studied. Emphasis will be placed on the interrelationships between the systems.

Related topics such as physical abnormalities and diseases of the systems will be integrated where possible. Laboratory work will include experiments, dissection, microscope work and the study of charts and models. Three one-hour lectures and one two-hour laboratory period per week.

**BI5520 Anatomy and Physiology II**

A one-semester course; four credit hours. A continuation of BI5520 integrating genetics and embryology to provide a basic understanding of the principles of heredity, and the processes of foetal growth and development. Three one-hour lectures and one two-hour laboratory period per week.

**BI5551 Genetics**

A one-semester course; four credit hours. The lectures present the fundamental Mendelian principles and the exploration of more recent discoveries, including DNA molecule and the operon theory of micro-organisms, higher plants and animals. New concepts of gene mutation and gene action are considered. Practical exercises are used to illustrate the principles. Three one-hour lectures and one two-hour laboratory period per week.

**Prerequisite:** One year of introductory biology subjects at the college level and permission of the instructor.

**BI5553 Microbiology**

A one-semester course; four credit hours. The biology of bacteria and micro-organisms is studied. Laboratory work emphasizes the sterile technique. Immunology is discussed. Three one-hour lectures and one three-hour laboratory period per week.

**Prerequisite:** One year of introductory biology subjects at the college level and permission of the instructor.

**BI5611 Biology (Nursing Home/Small Hospital Management)**

A one-semester course; four credit hours. Communicable diseases and general principles of physiology, genetics, and evolution are studied. The relationships of plants and animals to man are emphasized. Three one-hour lectures and one two-hour laboratory period per week.

**BI5999 Special Topics in Biology**

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in the discipline. Syllabus to be approved by department chairman and division chairman prior to registration. Three class hours per week or equivalent.

**Prerequisite:** An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project, and permission of the instructor.

\*BK6601 Principles of Bank Operations

A one-semester course; three credit hours. Survey of banking's relationship to the total economy and the functional relationships of departments within the bank. Develops the framework for more specialized study of the banking institution. Three class hours per week.

\*BK6602 Savings and Time Deposit Banking

A one-semester course; three credit hours. A fundamental study of the historical development and economic function of savings institutions and the savings process. Three class hours per week.

\*BK6611 Money and Banking

A one-semester course; three credit hours. The practical aspects of money and banking, emphasis is placed on such problems as economic stabilization, types of spending, the role of gold, limitations of central bank control, government fiscal policy, balance of payments and foreign exchange showing their repercussions on the banking industry in affecting yield curves and the structuring of portfolios. Three class hours per week.

\*BK6612 Bank Management

A one-semester course; three credit hours. A study of trends in the philosophy and practice of management. Some use of case study. Three class hours per week.

\*BK6621 Credit Administration

A one-semester course; three credit hours. Course concerns itself with a statement and a discussion of factors influencing and determining loan policy; methods of credit investigation and analysis, credit techniques, specific credit problems, and regular as well as unusual types of loans. Three class hours per week.

\*BK6622 Home Mortgage Lending

A one-semester course; three credit hours. Examination of mortgage credit in the United States and the structure of the mortgage market. An analysis of the management considerations in mortgage lending and portfolio management. Three class hours per week.

\*BK6623 Installment Credit

A one-semester course; three credit hours. Study of the installment credit function; credit information, lending, collections and other procedures as well as inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. Three class hours per week.

\*Courses designated BK (Banking) are offered only in the evening through the Division of Continuing Education. They are offered primarily for members of the American Institute of Banking, but may be elected by other students upon prior approval.

\*BK6624 Trust Department Services

A one-semester course; three credit hours. Study of trust services, responsibilities of executors and administrators, analysis of the structure of trusts, alternative forms and the general and investment responsibilities of trustees. Three class hours per week.

\*BK6651 Analyzing Financial Statements

A one-semester course; three credit hours. Basic considerations in financial statement analysis, basic financial ratios, analysis of working capital, and other items. Three class hours per week.

\*BK6652 Bank Letters and Reports

A one-semester course; three credit hours. A review of the forms of letter and report writing as it applies to public relations as well as emphasizes fundamental principles underlying modern correspondence. Three class hours per week.

\*BK6653 Bank Public Relations and Marketing

A one-semester course; three credit hours. A study of the public relations and marketing aspects of banking as it would apply to relations with customers, the community, and others. Three class hours per week.

\*BK6654 Fundamentals of Bank Data Processing

A one-semester course; three credit hours. A non-technical study of electronic data processing as applied to banks. A survey course. Three class hours per week.

CC2112 Problems in Early Childhood Education

A one-semester course; three credit hours. A sociological-psychological study of factors leading to educational success in representative compensatory programs for the young child. This course centers around the role of the family and cultural background as they relate to the development of school skills. Three class hours per week.

CC2201 Introduction to Child Care Technique

A one-semester course; three credit hours. This course provides the student with an understanding of the Child Care Worker's day, raises particular problems associated with organizing a group of youngsters, and presents a clear differentiation between the management and understanding of behavior. Three class hours per week.

\*Courses designated BK(Banking) are offered only in the evening through the Division of Continuing Education. They are offered primarily for members of the American Institute of Banking, but may be elected by other students upon prior approval.

**CC2264 Seminar in the Philosophy of Child Care**

A one-semester course; three credit hours. The student studies varied models of child care programs and the theories which they illustrate. The second half of the course involves clinical experiences in which the student explores in depth a model of a child care program located in the Merrimack Valley, studies the program in operation, and writes a research paper based upon his findings. Three class hours per week.

**CC2311 Observation and Recording of Child Behavior**

A one-semester course; one credit hour. A preliminary study of child behavior in varied institutional settings. Defined areas of child behavior will be observed and recorded. These observations will be discussed every other week at seminars. Two laboratory hours per week.

**CC2312 Laboratory Experience in Program Development**

A one-semester course; two credit hours. Skills and concepts of learning acquired in Children's Literature and the Introduction to the Creative Experience will be applied in selected centers for children. The student will play an active role in setting up projects, and working with the young child in the areas of art, music, crafts and literature. Four class hours and four laboratory hours per week.

Prerequisite: EN8401 and present enrollment in FA7012

**CC2353 Laboratory in Child Care Education I**

A one-semester course; three credit hours. The student will be actively involved in the varied activities which are part of all child education programs. Not only will the student work with arts, crafts, music and literature; he will also aid the supervising personnel in leading recreational activities, will work with the individual children in defined problem areas and will record his experiences for seminars held every other week. Nine hours per week clinical experience.

Prerequisite: CC2201, CC2371 and present enrollment in CC2112

**CC2354 Laboratory in Child Care Education II**

A one-semester course; six credit hours. The student will have greater responsibilities in his relationship with programs for the young child. Sixteen hours of practical experience each week will be spent within a defined institutional center. At the completion of the semester, the student should be competent to work in all areas normally associated with the para-professional in child care programs. Eighteen hours per week clinical experience.

Prerequisite: CC2353

**CC2371 Emotional Disturbances of Childhood**

A one-semester course; three credit hours. An application of pertinent data in etiology, nosology and remediation to the disturbed behavior of children in the child care situation.

Generally, the course will focus attention upon individualizing children and their problems so that the child care worker will learn to individualize his approach, learning both the limits and benefits of the group setting. Three class hours per week.

CC2480 Media Workshop

A one-semester course; one credit hour. An introduction to the use of the media in child care programs. Films, filmstrips, tapes, records, and television will be explored as they relate to education and entertainment in child care situations. Each student will be required to design one activity in which the media will be used as the basis of a learning experience. In addition, the student will become familiar with the operation of film and slide projectors, tape recorders, and closed-circuit television. One class hour per week.

CE6601 Surveying I

A one-semester course; four credit hours. The course is designed to give the student basic proficiency in use and adjustment of surveying instruments. Theory and practice in distance and elevation measurements are provided. Three class hours and three laboratory hours per week.

Prerequisite: MA5621 (CE6601 may be taken concurrently with MA5621)

CE6602 Surveying II

A one-semester course; four credit hours. The course is designed to give the student advanced proficiency in measurements and surveys. Topics covered are angle measurements, curve laying, errors, detail, cross sections, stadia measurements, topographical surveys, note taking, note reduction, plotting from notes, map making and common computations. Three class hours and three laboratory hours per week.

Prerequisite: CE6601

CE6612 Drawing for Civil Technology

A one-semester course; one credit hour. A course designed to give the student a good knowledge of some of the specialized drafting techniques required in the practice of Civil Technology. Topics covered are plan drawing, cross section drawing, profile drawing, inking techniques, printing techniques, etc. Three laboratory hours per week.

Prerequisite: CE6601

CE6651 Mechanics for Civil Technology

A one-semester course; three credit hours. Course is designed to give the student a knowledge of statics and dynamics as applied to civil technology problems. Analysis of forces acting on bodies both at rest and in motion are studied in detail. Three class hours per week.

Prerequisite: PI5621 and PI5622

**CE6652 Building Materials**

A one-semester course; four credit hours. Course is designed to give the student a knowledge of various building materials. The strength, economy and construction methods of wood, steel, concrete (reinforced and not reinforced), penetrated stone, asphalt, masonry, etc. are studied. A laboratory gives practice testing various materials according to accepted standards. Three class hours and three laboratory hours per week.

**CE6661 Highway Engineering I**

A one-semester course; four credit hours. The course is designed to give the student understanding and practice in solving the problems of modern highways from the basic traffic studies which develop need, through the problems of location, economics, financing, layout, surveys for plans, and plan preparation. Three class hours and three laboratory hours per week.

Prerequisite: CE6601 and CE6602

**CE6662 Highway Engineering II**

A one-semester course; four credit hours. The course is designed to give the student advanced theory and practice in the design of roadways, drainage, quantity estimation, preparation of contract documents, execution of contract, construction layout and control, contract payment quantities, inspection of materials and workmanship, and acceptance of the finished highway. Three class hours and three laboratory hours per week.

Prerequisite: CE6661

**CE6671 Sanitation**

A one-semester course; three credit hours. The course is designed to give the student a knowledge of the problems and solutions of water supply and sewerage. The course considers the problems of water from rainfall, through storage, storm drainage, hydraulics, distribution and treatment of drainage water, collection, disposal and treatment of sanitary sewage. Water and storm drainage and sanitary sewerage systems design is stressed. Three class hours per week.

**CE6672 Soil Mechanics**

A one-semester course: four credit hours. The course is designed to give the student a basic knowledge of the problems of soils. Problems of sub bases, loadings, sheeting, settlement, slope stability, tests of soils and gravel are considered and solved. Field trips are taken to inspect various practical situations. Three class hours per week.

**CH5501-CH5502 General Chemistry I and II**

A two-semester course; four credit hours per semester. First semester deals with physical chemistry; second semester with inorganic chemistry and an introduction to organic chemistry. The study of the principles of chemistry by a reliance on the measurement and mathematical treatment of chemical units. The application of these units to the interaction of chemical substances under mechanical, thermal and electrical changes as

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exemplified by considering the combinations by weight, the gas laws, electro-chemistry and chemical equilibrium in gaseous and solution reactions. Three class hours and one three-hour laboratory period per week.

CH5503 Introductory Chemistry I

A one-semester course; four credit hours. The course covers the basic understanding of atomic structure of the elements, periodic table and radioactivity. The study of solid, liquid and gaseous states of matter is undertaken. Three one-hour lectures and one three-hour laboratory period per week.

CH5504 Introductory Chemistry II

A one-semester course; four credit hours. The course covers the study of solutions, acids, bases and neutralization. The application of physical chemical theory to inorganic chemistry. A brief review of organic chemistry is undertaken with special emphasis on how this aspect of chemistry relates to biological systems. Three one-hour lectures and one three-hour laboratory period per week.

CH5999 Special Topics in Chemistry

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in the discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project, and permission of the instructor.

CT6601 Fundamentals of Digital Logic

A one-semester course; three credit hours. The evolution of data processing or automatic computation. The mechanics of automatic computation including number system, logic, codes, arithmetic operations, and organization are covered in detail. Three one-hour lectures per week.

CT6611 Business Programming I

A one-semester course; four credit hours. Unit Record Equipment is studied as an off lines aid to the use of a computer. Introduction to business programming through Report Program Generator coding. Three one-hour lectures and one two-hour laboratory period per week.

CT6622 Scientific Programming

A one-semester course; four credit hours. A comprehensive study of FORTRAN and/or equivalent programming language with related mathematics. Three one-hour lectures and one two-hour laboratory period per week.

**CT6631 Introduction to Data Processing**

A one-semester course; three credit hours. Data processing from manual systems to computers, developments in the field, the equipment involved, how the equipment is used, how it works, and the applications of data processing systems. Develops understandings preparing students to cope with the computer phenomenon as it relates to their field, or to further develop competency in machine operation or computer programming. Three class hours per week.

**CT6651 Assembly Language Programming**

A one-semester course; four credit hours. A thorough study of the absolute machine language and the assembler for the computer on campus. Three one-hour lectures and one two-hour laboratory period per week.

**CT6652 Business Programming II**

A one-semester course; four credit hours. A detailed study of COBOL and/or equivalent programming language with applications. Three one-hour lectures and one two-hour laboratory period per week.

**CT6676 Systems Development and Design**

A one-semester course; four credit hours. Effective use of data processing equipment in meeting the needs of business. The approach, requirements of the system, developing the solution, data and system implementation. Three one-hour lectures and one two-hour laboratory period per week.

**CT6678 Advanced Programming**

A one-semester course; four credit hours. Advanced topics such as disc and tape file organization, interrupt programming, simulation, lineage of programs written in different languages, and a conversational language such as APL or BASIC. Three one-hour lectures and one three-hour laboratory period per week.

**CT6682 Computer Applications to Civil Technology Problems**

A one-semester course; four credit hours. The course is designed to give the student a knowledge of the computer solutions to the great quantities of calculations that are necessary in practice. Basic computer operation and programming techniques are covered with emphasis on FORTRAN and COGO languages. Three class hours and three laboratory hours per week.

Prerequisite: MA5621 and MA5622

**EC3311 Principles of Economics I**

A one-semester course; three credit hours. Introduction to macro-economic analysis and policy. An examination of the foundation and nature of economic principles as they apply to national output, money and banking, and monetary and fiscal policy. Course also focuses upon the problems of employment, inflation, economic growth as illuminated by modern national income analysis. Three class hours per week.

**EC3312 Principles of Economics II**

A one-semester course; three credit hours. Introduction to micro-economics. This semester centers upon the functioning of individual markets and their effectiveness for resource allocation. Includes price and production theory, the distribution of income, comparative economic systems, international trade, and the theory of household behavior. Three class hours per week.

Prerequisite: EC3311

**EC3652 Survey of Economics**

A one-semester course; three credit hours. A non-technical survey of current economic problems. Background of economic concepts and terminology. Some focus on comparative economic systems. Not recommended for transfer students. Three class hours per week.

**EN0101 Journalism I**

A one-semester course; three credit hours. To be offered both semesters. The course will analyze and compare current newspapers and magazines, and will emphasize newswriting, reporting, copy editing, and layout. Knowledge of typing is recommended. Three class hours per week.

**EN0121 Creative Writing**

A one-semester course; three credit hours. A seminar in writing beyond the freshman level, especially recommended for English majors, prospective teachers, and students who have exempted freshman English. The art of various types of imaginative literature is examined as a guide to the development of individual style, with emphasis on writing practice and group evaluation. Three class hours per week.

Prerequisite: EN4401 and EN4402 or permission of the instructor.

**\*EN0401 Reading Strategies**

A one-semester course; three credit hours. Designed to expose students to effective reading and study techniques. Emphasis is placed on understanding the printed work in various forms - phrases, sentences, paragraphs, and whole selections. Some of the areas explored include concepts such as main ideas, significant details, vocabulary expansion and idea relationships like cause and effect, comparison-contrast, explanation, etc. The application of processes such as association, visualization, concentration and repetition is stressed to facilitate interpretation and memory of passages. Critical reading skills and organized approaches to study are also considered. Diagnostic testing is done at the beginning and end of the course. Three class hours per week.

\*Course offered in the Discovery Program only.

EN2455 Film Study

A one-semester course; three credit hours. This course will attempt to foster critical taste in film. Students will explore the role of film in contemporary society by viewing and discussing: documentaries, experimental films, expressionistic films, animated films, and commercial films. Discussion and analysis will acquaint the student with the interrelationship of film technique and content. Three class hours per week.

EN3011 Reading Improvement

A one-semester course; no credit hours. This course is designed to aid students in the overall improvement of their verbal skills. Special attention will be paid to increasing skill in speed and comprehension of reading. The course is structured to provide a flexible and individualized approach to reading skill improvement, vocabulary building and critical reading. Three class hours per week.

\*EN4311 Communications I

A one-semester course; three credit hours. A writing and reading course which is closely related to Humanities I. The origins of language, social aspects of language, pre-symbolic and symbolic language, and social control through language will be studied as they relate to man's biological and social nature. Writing and reading assignments will be interrelated with Humanities I. Three class hours per week.

EN4401-EN4402 English Composition I and II

A two-semester course; three credit hours per semester. Designed to develop lucid, effective written expression. Grammar, syntax and punctuation are reviewed. Stressed are special techniques in expression and the development of logical thinking to enable the student to organize, outline and express his thoughts in written form at various levels. Required of all students. Three class hours per week.

EN4403 Advanced Composition

A one-semester course; three credit hours. A seminar in writing beyond the freshman level, designed for students seriously interested in writing. Types of both non-fiction and fiction will be examined as guides in the development of writing style. Three class hours per week.

Prerequisite: EN4401 and EN4402 or permission of the instructor.

\*Course offered in the Discovery Program only.

## EN4676 Technical Writing

A one-semester course; three credit hours. Engineering and scientific report writing. General inductive exposition with emphasis upon research writing, industrial reports and graphic techniques. Three class hours per week.

Prerequisite: EN4401 and EN4402

## EN8011 Speech

A one-semester course; three credit hours. Instruction and practice in skills essential to effective oral communication. The course includes organization, presentation and audience analysis as well as instruction in diction, volume and posture. Three class hours per week.

## EN8012 Oral Interpretation

A one-semester course; three credit hours. Designed to present the various techniques in effective oral reading. Stress is placed on vocal flexibility, imagery, and emotional involvement. A wide range of dramatic literature will be used. Three class hours per week.

Prerequisite: EN8011 and permission of the instructor.

## EN8013 Skill and Motivation Development

A one-semester course; no credit hours. A preliminary course, offered in the Summer Session, designed to increase an incoming student's awareness of the skills and mechanics necessary for the college experience. The course meets five days a week during Summer Session.

## EN8401 Children's Literature

A one-semester course; three credit hours. An introductory course in children's books. Considers the history of children's literature and contemporary authors. Study of criteria of good literature, children's interests and developmental stages related to books, various genre of children's literature, children's book awards, illustrators and authors, and reference courses. Three class hours per week.

## EN8851-EN8852 Masters of American Literature

A two-semester course; three credit hours per semester. A study of the most important American novelists, poets and belle-lettistes from 1850 to the present. The emphasis is on the reading of works in their entirety, with depth of reading as well as catholicity being the objective. Typical authors who will form the subject of the course: Frost, Eliot, Hemingway, Faulkner, Salinger, Sinclair Lewis, Dreiser, Crane, Mark Twain, Melville, Hawthorne. Three class hours per week.

## EN8853-EN8854 Masters of British Literature

A two-semester course; three credit hours per semester. A study of the major works of selected English poets, dramatists and prose writers, with their historical and literary background,

will be directed through lectures and prescribed reading, with special exercises in interpretation and criticism. Three class hours per week.

#### EN8861-EN8862 Masters of Western Literature

A two-semester course; three credit hours per semester. An analysis of the literary masterpieces of the Western Tradition, emphasizing the literary philosophy and art of each author. Authors to be considered include Homer, Sophocles, Aeschylus, Plato, Dante, Strindberg, Ibsen, Cervantes, Chekhov, Gogol, Hawthorne, Melville. Variations in selections and authors occur from year to year. Three class hours per week.

#### EN8865 The Black Experience

A one-semester course; three credit hours. A study of American Black literature that will include a few representative novels and autobiographies and a sample of short stories and poems, mostly by Black writers, to better understand the relationship between literature and life. Three class hours per week.

#### EN8871 The English Novel

A one-semester course; three credit hours. Reading and discussion of great representative novels from 1740 to the present. Readings to be selected by the instructor. Three class hours per week.

#### EN8881 The American Novel

A one-semester course; three credit hours. Reading and discussion of significant novels of the nineteenth and twentieth centuries. Included among the authors considered are: Twain, Melville, Hawthorne, Crane, Dreiser, Henry James, Fitzgerald, Steinbeck, Anderson, Hemingway, Salinger, Bellow, Faulkner, Flannery O'Connor. Analysis of form and philosophy. Three class hours per week.

#### EN8891 Introduction to Poetry

A one-semester course; three credit hours. Designed to acquaint the student with the various forms and scope of poetry. Among the poets considered are Marvell, Shakespeare, Byron, Keats, Dickinson, Poe, Eliot, Pound, Plath, et al. This course is to be an overview of the concept of poetry. Three class hours per week.

#### EN8893 The Contemporary Novel

A one-semester course; three credit hours. Readings in British, American, French, German, Russian and South American fiction with special emphasis on philosophical and arch typal linkage. Three class hours per week.

#### EN8999 Special Topics in English

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

## ES5501 Meteorology (Earth Science I)

A one-semester course; four credit hours. A basic study of the elements which constitute weather; temperature, pressure, winds, humidity and precipitation. Further study includes global patterns of weather conditions and the resultant climatic zones. Three one-hour lectures and one two-hour laboratory period per week.

## ES5502 Physical Geology (Earth Science II)

A one-semester course; four credit hours. Introduction to landforms and the processes of their formation: erosion by wind, water, ice; beaches and wave action. Further study is accomplished through the use of topographic maps. Additional topics include descriptions of basic rocks and minerals, volcanism, mountain building and crustal movement. Three one-hour lectures and one two-hour laboratory period per week.

## ES5999 Special Topics in Earth Science

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

## ET601 Personal and Professional Development

A two-week course; no credit hours. An orientation course of seminar classes covering subjects such as personal and professional interrelationships, ethics, study techniques and membership in professional societies. The general purpose is to assist the student in adjusting to his role as student and in preparing himself for his future as a member of a technically oriented society. One class hour per day.

## ET6111 Basic Concepts in Engineering

A two-week course; one credit hour. A review of arithmetic notation and the basic operations of addition, subtraction, multiplication, division, conversion of fractions to decimals, and percentages. Use of slide rule and graphical techniques for data presentation and elementary statistical concepts are studied. Ten class hours per week.

## ET6601 Graphics

A one-semester course; two credit hours. This course stresses communication by graphical or pictorial means. Lettering, graphics sketching, orthographic projection, auxiliary views, dimensioning, descriptive geometry principles are topics covered. Neatness is emphasized throughout. One class hour and one two-hour laboratory period per week.

## ET6611 D. C. Circuits

A one-semester course; four credit hours. Introduction to the analysis of electric circuits using D. C. sources. Applications of Kirchoff's Voltage and Current Laws, superposition, loop analysis, modal analysis and Thevenin's Theorem. Three class hours and one three-hour laboratory period per week.

## ET6612 A. C. Circuits

A one-semester course; four credit hours. Extension of the theorems developed in ET6611 as they apply to circuits excited by sinusoidal sources. Energy considerations, storage of energy, RMS determinations and transformers. Three class hours and one three-hour laboratory period per week.

Prerequisite: ET6611

## ET6651 Engineering Mechanics I

A one-semester course; three credit hours. Development of fundamental concepts of mechanics such as vectors, forces and moments. Detailed treatment of free body diagrams and their application to force systems. Laws of static equilibrium, friction forces, first and second moments, and problems involving various structures and machine parts. Three class hours per week.

## ET6652 Engineering Mechanics II

A one-semester course; three credit hours. Basic laws of kinematics of particles and rigid bodies involving linear, angular, relative and absolute motion. Newton's Laws and their application to the kinematics of rigid bodies in translation, rotation and plane motion; and the principles of work, kinetic energy, impulse and momentum. Three class hours per week.

Prerequisite: ET6651

## ET6653 Advanced Circuits

A one-semester course; four credit hours. Study of the behavior of electric circuits excited by non-linear sources. Fourier series, pulse circuits, and non-linear elements. Three class hours and one three-hour laboratory period per week.

Prerequisite: ET6612

## ET6655 Electrical Measurements

A one-semester course; four credit hours. Study of the problems in precise measurements of the fundamental parameters of voltage, current, velocity, acceleration, displacement, time and events per unity time. Emphasis will be on usage and limitations of current equipment. Three class hours and one three-hour laboratory period per week.

Prerequisite: ET6612

## ET6661 Networks I

A one-semester course; four credit hours. Introduction to general network solutions employing mathematical models and topology. Emphasis on steady state network solutions using Kirchoff's Laws, Thevenin's Theorem, superposition theorem, loop and modal analysis. Three class hours and one three-hour laboratory period per week.

## ET6662 Networks II

A one-semester course; four credit hours. Study of electrical networks under transient conditions. Use of singularity functions, pole zero plots and Fourier Series solutions are included. Three class hours and one three-hour laboratory period per week.

Prerequisite: ET6661

## ET6682 Applied Industrial Electronics

A one-semester course; four credit hours. Introduction to thyratron speed control devices, power rectification, induction heaters, synchro systems, servo motors, switching circuits, programmed machine control and other industrial devices. Three class hours and one three-hour laboratory period per week.

Prerequisite: ET6653 and ET6687

## ET6687 Electronics I

A one-semester course; five credit hours. Electron emission, electron ballistics, characteristics of vacuum tubes, application of network theory, electronic circuits, rectifiers, single stage amplifiers, R-C coupled and tuned amplifiers, and push-pull operation. Four class hours and one three-hour laboratory period per week.

Prerequisite: ET6662 and MA5508

## ET6688 Electronics II

A one-semester course; five credit hours. Continuation of ET6687. Material covers feedback amplifiers, gas-filled tubes, oscillators, modulation and demodulation. Introduction to transistors and their associated circuitry is included. Four class hours and one three-hour laboratory period per week.

Prerequisite: ET6687

## ET6690 Semiconductor Circuits

A one-semester course; four credit hours. Semi-conductor physics, diodes, avalanche and zener diodes, temperature stabilization, transistor operation; four terminal network theory utilizing a, y, h, g parameters, a-c equivalent circuit analysis, series and shunt feed back, power amplifiers are studied. Practical experience in measurement and design and analysis of semiconductor circuits in the laboratory. Three class hours and one three-hour laboratory period per week.

Prerequisite: Basic understanding of networks and electronics.

FA7012 Introduction to the Creative Experience

A one-semester course; three credit hours. An investigation of the creative process as it relates to early childhood education. Practical experience in art, crafts and music and drama serves as the basis for discussions of creativity in the young child. Three class hours per week.

FA7081 Analysis of Visual Works of Art

A one-semester course; three credit hours. Discussion and evaluation of visual works of art with special emphasis on painting. The class will deal with such questions as: What is Art? What is the role of Beauty in the definition of Art? How does one evaluate a work of Art? What is Creative Process? Who is the Creative Person? Three class hours per week.

FA7082 Historical Survey of Visual Ideas

A one-semester course; three credit hours. Discussion and evaluation of visual works of art from pre-history to present day. While the first semester dealt with general concepts of art as related to all works of art, this course will place emphasis on the unique contribution of individual cultures in the development of the western world. Three class hours per week.

Prerequisite: FA7081 or permission of the instructor

FA7083 Studio Art: Two-dimensional Expression I

A one-semester course; three credit hours. An introduction and exposure to various materials that have the potentiality for two-dimensional expression. Emphasis will be on the experiencing of new materials and the inherent properties that each of these materials have. All materials shall be provided by the student. There will be a total of five units each exploring a different medium of expression. Three two-hour classes per week.

FA7084 Studio Art: Two-dimensional Expression II

A one-semester course; three credit hours. Rather than considering the elements of line, point, texture, pattern, space, form, etc. in isolation, the course will concentrate on bringing these together into more complex structures and compositions. The student will be expected to complete at least seven different projects in the course of the semester, each one placing emphasis on a separate aspect of drawing. Three two-hour contact sessions per week.

FA7085 Studio Art: Three-dimensional Expression I

A one-semester course; three credit hours. An introduction and exposure to various materials that have the potentiality for three-dimensional expression. Emphasis will be on the experiencing of new materials and the inherent properties that each of

these materials have. All materials shall be provided by the students except those used in the first unit. There will be a total of five units each exploring a different medium of expression. Three two-hour classes per week.

**FA7086 Studio Art: Three-dimensional Expression II**

A one-semester course; three credit hours. The course will place more emphasis on the technical nature of painting in relation to preparing canvass, color mixing, etc. Greater stress on role of structure and composition within a work. The student will be expected to complete at least five different projects in the course of the semester, placing special emphasis on one aspect of painting. Three two-hour contact sessions per week.

**FA7091 Music Appreciation**

A one-semester course; three credit hours. No previous training in music is required. The course is intended for the greater understanding and enjoyment of music. Emphasis is placed on musical style and historical background evident in the works of the great composers. Other compositions from the Baroque period to the present day are studied. Listening assignments are included. Three class hours per week.

**FA7765 Introduction to the Theatre**

A one-semester course; three credit hours. An introductory course which will survey the development and techniques of modern drama. Instruction will be given in acting, directing and the technical aspects of play production. Three class hours per week.

**FA7775 Fundamentals of Play Production**

A one-semester course; three credit hours. The methods and techniques of play production. Practical laboratory work, seminars, and demonstrations. Lighting the stage, set construction, costume design and construction, make-up and other theatre related activities are performed and discussed. First-hand experience is gained by participating in aspects of play production. Three class hours per week.

Prerequisite: Permission of the instructor.

**FA7999 Special Topics in Fine Arts**

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

**FI3652 Business Finance**

A one-semester course; three credit hours. Principles and practices of business finance. Short and long term sources of funds, management of financial assets, capital requirements, alternative forms of financing, and the capital market. Some use of case study method. Three class hours per week.

**FI6651 Principles of Insurance**

A one-semester course; three credit hours. Study of the principles of risk management and how insurance handles risk. The concept of risk management is outlined. Insurance coverages for the following are studied: property, liability, life and health. Three class hours per week.

**FI6653 Credits and Collections**

A one-semester course; three credit hours. Study of the credit function in business. Subjects covered include the credit risk, credit instruments, consumer credit, sources of credit information, retail credit and collection methods. Three class hours per week.

**FI6663 Principles of Real Estate**

A one-semester course; three credit hours. Survey of the various areas of real estate practice and the principles involved in the purchase, valuation, and selling of real estate. Three class hours per week.

**FR4401-FR4402 Introductory French I and II**

A two-semester course; three credit hours per semester. For students who have not completed two years of secondary school French or the equivalent as determined by the college. An introduction to the basic grammatical patterns of French. Speaking, reading and writing in the French language. Three class hours per week.

**FR4451-FR4452 Intermediate French I and II**

A two-semester course; three credit hours per semester. For students who have completed two or more years of secondary school French or the equivalent as determined by the college, or who complete FR4401 and FR4402 successfully at the college. A continued study of FR4401 and FR4402 language skills, emphasizing the development of reading ability. Three class hours per week.

**FR4999 Special Topics in French**

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

**Prerequisite:** An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

**FR8851 Masterpieces of French Literature**

A one-semester course; three credit hours. At least one representative work from each major literary period will be read in French. Three class hours per week.

GE9511 Principles of Geography

A one-semester course; three credit hours. A systematic study of the earth's physical and social patterns. Types and uses of maps, the earth as a planet, the atmosphere, weather and climate, topography and its development, resources and economic activities. Three class hours per week.

GE9512 World Regional Geography

A one-semester course; three credit hours. Major world regions and political units. A survey of nations in terms of human activities and conditions as they are related to the earth's physical features. Natural and cultural environments of man are focussed on political units. Three class hours per week.

Prerequisite: GE9511

GM4401-GM4402 Introductory German I and II

A two-semester course; three credit hours per semester. For students who have not completed two years of secondary school German or the equivalent as determined by the college. Audio-lingual emphasis. Introduction to grammatical patterns, reading and writing. Three class hours per week.

GM4451-GM4452 Intermediate German I and II

A two-semester course; three credit hours per semester. For students who have completed two or more years of secondary school German or the equivalent as determined by the College, or who have completed GE4401 and GE4402. A continued study of the language emphasizing the development of reading ability. Three class hours per week.

GM4999 Special Topics in German

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

GV3313 The Federal Government

A one-semester course; three credit hours. The structure, functions, and procedures of the legislative, judicial, and administrative branches of the Federal Government will be analyzed within the context of the Constitution of the United States. Emphasis will be given to the structure and function of the various branches of government as well as their interrelationships and the effects of other factors on their functions. Three class hours per week.

#### GV3314 State and Local Government

A one-semester course; three credit hours. The structure, functions, politics, and problems of state and local government will be dealt with in an attempt to become aware of the functions and operations of state and local government. Special emphasis will be given to the identification and definition of problem areas in an attempt to better understand the issues involved as well as to deal with possible solutions. Three class hours per week.

#### GV3315 Civil Rights and Liberties

A one-semester course; three credit hours. Course deals with the role of individual rights and liberties in American society within the framework of the United States Constitution. The paradox of freedom is essentially the core around which lectures, discussion and research will be conducted. It is advisable to take this course after having completed a course in federal government. Three class hours per week.

#### GV3323 Comparative Modern Government

A one-semester course; three credit hours. Comparison and contrast of the spirit and structures of government in France, Great Britain, the Soviet Union, Germany. Three class hours per week.

Prerequisite: HI9901, HI9902, GV3313 and permission of the instructor.

#### GV3999 Special Topics in Government

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in the discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

#### HI9901-HI9902 Western Civilization

A two-semester course; three credit hours per semester. Survey of the major historical developments and trends in Western Civilization from the Ancient Near East and Classical Greece and Rome to modern times, with emphasis on the formation and evolution of the social, political, economic, and cultural institutions of Modern Europe. Three class hours per week.

#### HI9913-HI9914 U. S. History

A two-semester course; three credit hours per semester. The United States since Colonial times. The development of the social, political and cultural institutions. Three class hours per week.

#### HI9951 European History 1789-1914

A one-semester course; three credit hours. An analysis of the major political, social, economic, religious and intellectual

movements of Western European Civilization from the French Revolution through the origins of the First World War. Three class hours per week.

Prerequisite: HI9901, HI9902 and permission of the instructor.

HI9952 European History 1914-1965

A one-semester course; three credit hours. Study of the major social, political, intellectual, religious and economic developments of the half-century. Primary focus on politics, the nature, conduct and consequences of W. W. I, Paris Peace Settlement, search for collective security, depression and the rise of totalitarianism, causes, conduct and results of W. W. II, cold war, the end of empire, the search for European unity. Three class hours per week.

Prerequisite: HI9901, HI9902 and permission of the instructor.

HI9953 Far Eastern History

A one-semester course; three credit hours. Survey of the history and civilization of the Orient with major emphasis on China and Japan, the impact of the West, Far Eastern ideas and institutions in the nineteenth and twentieth centuries. Three class hours per week.

Prerequisite: HI9901, HI9902 and permission of the instructor.

HI9955 Minority Groups in America

A one-semester course; three credit hours. Seminar on the contributions and difficulties of religious, racial, ethnic and other minority groups in the pluralistic American society from colonial times to the present. Particular attention will be given to the following groups: Catholic and Jewish, American Indian, Negro and Puerto Rican, and southern European and Oriental. Students will research, write and present individual reports. Three class hours per week.

Prerequisite: HI9913, HI9914 and permission of the instructor.

HI9999 Special Topics in History

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

HS6601 Medical Terminology

A one-semester course; three credit hours. Study of prefixes, suffixes; abbreviations; disease; operative, and drug terms. Also included are terms related to all areas of medical science,

hospital service, and the para-medical specialities. Three class hours per week.

\*HU3111 Humanities I

A one-semester course; three credit hours. An interdisciplinary focus on man: cosmological, philosophical, biological, sociological, political and ecological. Sequence of topics: Man and the Cosmos, Biological Man, Man in Society, Man the Politician, Man and His Environment. Format: a colloquium involving a natural scientist, a social psychologist, and an historian-political scientist. Three class hours per week.

IT4401-IT4402 Introductory Italian I and II

A two-semester course; three credit hours per semester. For students who have not completed two years of secondary school Italian or the equivalent as determined by the college. Audio-lingual emphasis. Introduction to grammatical patterns, reading and writing. Three class hours per week.

IT4451-IT4452 Intermediate Italian I and II

A two-semester course; three credit hours per semester. For students who have completed two or more years of secondary school Italian or the equivalent as determined by the college, or who have completed IT4401 and IT4402. A continued study of the language emphasizing the development of reading ability. Three class hours per week.

IT4999 Special Topics in Italian

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

\*\*LE3601 Criminal Law

A one-semester course; three credit hours. The substantive law of crimes, including the general and the special parts of the criminal law. Emphasis is placed on analysis of the elements of particular crimes through case study. Three class hours per week.

\*\*LE3602 Law Enforcement Management and Planning

A one-semester course; three credit hours. Consideration of police problems at the administrative level, including coordination of all branches of a police department. An evaluation of line, staff and auxiliary functions and the interrelationship of each. The purpose, need, and scope of planning in the police

\* Course offered in the Discovery Program only.

\*\* Course offered in the Division of Continuing Education only.

operation, including staffing, collection of data and use of data processing. Three class hours per week.

**\*\*LE3603 Introduction to Criminal Justice**

A one-semester course; three credit hours. A survey of federal, state, county and local law enforcement agencies, their history, development and modern role within the field of criminal justice. Three class hours per week.

**\*\*LE3604 Introduction to Criminology**

A one-semester course; three credit hours. A survey of the patterns and evolution of adult criminal and juvenile delinquent behavior analyzed in terms of various theories of such behavior; administration of criminal justice; police, law, courts (including juvenile courts) and prisons. Three class hours per week.

**\*\*LE3651 Police Operations**

A one-semester course; three credit hours. Organization and function of line operations in law enforcement including patrol, traffic, investigation, juvenile, vice and other specialized operations. Three class hours per week.

**\*\*LE3653 Criminal Investigation**

A one-semester course; three credit hours. An introduction to field investigation, including conduct at the crime scene, interview and interrogation of witnesses and suspects, the use of informants, and techniques of surveillance. Emphasis is placed on special investigative techniques and on the court procedure of the police case. Three class hours per week.

**\*\*LE3654 Criminal Procedure**

A one-semester course; three credit hours. The criminal process from investigation through arrest, indictment, trial and sentencing. Emphasis is placed on procedural matters especially affecting law enforcement such as arrest, search and seizure, interrogation, wiretapping, entrapment, and pre-trial publicity. Three class hours per week.

**\*\*LE3656 Introduction to Criminalistics**

A one-semester course; three credit hours. The organization, capabilities, and use of a criminalistics laboratory, including demonstrations of identification and comparison of evidentiary materials. Three class hours per week.

**LW6651 Business Law I**

A one-semester course; three credit hours. Introduction to law and its development. The law of contracts and its elements. The law of agency and its application to business. Three class hours per week.

**LW6652 Business Law II**

A one-semester course; three credit hours. A continuation of LW6651, developing a basic understanding and application of the Uniform Commercial Code involving negotiable instruments, sales, banking, partnerships, corporations, and estates and trusts. Three class hours per week.

Prerequisite: LW6651

**\*MA501 Fundamentals of Mathematics**

A one-semester course; three credit hours. A self-help course taught on a tutorial basis to assist students deficient in the fundamentals of mathematics. Basic level. Five class hours per week. Credit for either MA502 or MA503, in lieu of credit for MA501, will be given to students who master the appropriate material.

**\*MA502 Structure of Arithmetic**

A one-semester course; three credit hours. An introduction to the "new math" which aims to strengthen the computational skill of the student as well as foster a deeper understanding of the nature of "number" and "operation". The unifying concept of "set" is used throughout the course to define natural numbers and to develop the rational numbers and real numbers and the operations of arithmetic. The logical structure of mathematics is shown by using the axiomatic approach. Five class hours per week.

**\*MA503 Contemporary Algebra**

A one-semester course; three credit hours. Instruction in the theory of sets and numbers, the language of algebra, equations and the inequalities in one and two variables, systems of equations and polynomials, factoring, quadratic equations inequalities, functions and relations, exponents, and radicals. Five class hours per week.

**MA0500 Developmental Pre-school Mathematics**

A one-semester course; three credit hours. The course is designed to train the student to know what basic intuitive mathematical concepts are at the foundation of a pre-school child's mathematical development. He is further trained in how to enhance and encourage these concepts in unstructured and informal ways. He is shown how to observe the child's activities for opportunities to strengthen the child's intuitive mathematical base. He is further given a fund of activities for the child which usually lead to opportunities for reinforcing the child's intuitive mathematical background.

**MA5001 Pre-college Mathematics**

A one-semester course; no credit hours. Especially designed to fulfill prerequisites for MA5503. Sets. Sets of numbers.

\* Course offered in the Discovery Program only.

Properties of a field. Solution and graphing of equations and inequalities in one and two variables. Compound statements. Three class hours per week.

MA5503 Finite Mathematics I

A one-semester course; three credit hours. Compound statements. Truth tables. Inference and proof. Set theory, counting and measuring. Mathematical reasoning and mathematical systems. Three class hours per week.

Prerequisite: Two years of high school algebra  
or MA5001.

MA5504 Finite Mathematics II

A one-semester course; three credit hours. Relations and functions. Permutations and combinations. Probability. Descriptive statistics. Sampling designs. Three class hours per week.

Prerequisite: MA5503

MA5506 Statistics

A one-semester course; three credit hours. Set theory approach to probability. Descriptive statistics. Probability distributions. Sampling Inferences from statistics. Hypothesis testing. Linear regression and correlation. Three class hours per week.

Prerequisite: MA5503

MA5508 Elementary Functions

A one-semester course; three credit hours. Set theory approach to polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. Analytic geometry. Three class hours per week.

Prerequisite: MA5503

MA5510 Contemporary Mathematics for Elementary Teachers

A one-semester course; three credit hours. An introductory course designed to help students to understand the ideas behind the mathematics needed to be successful teachers in elementary education. Course deals with, and illustrates, the interaction between the arithmetic and geometric aspects, and deals with the broad range of, computational schemes currently used in elementary mathematical education. (MA5503 recommended). Three class hours per week.

MA5531 Calculus I (Liberal Arts)

A one-semester course; four credit hours. The integral and derivative. Differential calculus of polynomial, rational, exponential, logarithmic and trigonometric functions, with an emphasis on problem solving; antiderivatives. Four class hours per week.

**MA5532 Calculus II (Liberal Arts)**

A one-semester course; four credit hours. Differential functions, chain rule, methods of integration, implicit and inverse functions. Limits, applications of integration to problem solving. Volume, theory of curves. Four class hours per week.

Prerequisite: MA5531 or equivalent

**MA5533 Introduction to Statistics**

A one-semester course; three credit hours. Emphasis on the role of statistics in the application of the scientific method. Descriptive statistics and statistical inference. Variation, central tendency and dispersion. Finite sample space. Random variable. Inference. Linear regression and correlation. Three class hours per week. Required for all students in the Computer Technology Program.

Prerequisite: MA5521 or MA5611 and MA5612

**MA5611-MA5612 Finite Mathematical Models I and II**

A two-semester course; three credit hours per semester. Topics include: logic, set theory, vectors and matrices, probability and Markov chains, linear programming and game theory. Three class hours per week.

**MA5613 Mathematics of Finance**

A one-semester course; three credit hours. The mathematics used in business transactions. Three class hours per week.

**MA5621 Algebra and Trigonometry**

A one-semester course; four credit hours. For students enrolled in a technology curriculum. A complete review of algebra. Introduction to trigonometry. Three class hours and two one-hour problem-solving sessions per week.

**MA5622 Advanced Algebra and Trigonometry**

A one-semester course; four credit hours. For students enrolled in a technology curriculum. Emphasis on the use of algebra, trigonometry and graphics in the solution of technical problems. An introduction to the concepts of rate of change and summation of areas. Three class hours and two one-hour problem-solving sessions per week.

Prerequisite: MA5621

**MA5641 Mathematics of Business**

A one-semester course; three credit hours. A study of the mathematics of percentage, interest, discounts, depreciation, insurance, payroll, and statistical averages. Three class hours per week.

**MA5651 Advanced Technical Mathematics I**

A one-semester course; four credit hours. For students enrolled in a technology curriculum. Use of mathematics in solving technical problems involving velocity, acceleration, area, volume, maximum and minimum. Four class hours per week.

Prerequisite: MA5622

**MA5652 Advanced Technical Mathematics II**

A one-semester course; three credit hours. The mathematics of scalar and vector products, solid analytical geometry, partial derivatives, series expansions, deMoivre's Theorem, L'Hospital's Rule, etc. Three class hours per week.

Prerequisite: MA5651 or equivalent

## MA5661 Advanced Trigonometry and Analytic Geometry

A one-semester course; four credit hours. Review of the fundamentals of algebra and trigonometry. Introduction to advanced algebraic concepts, trigonometric identities, basic statistics, complex variables, analytic geometry and the basic forms of differentiation and integration. Three class hours and one two-hour problem-solving session per week.

## MA5671 Business Statistics

A one-semester course; three credit hours. The use of statistical methods in the management of business. Three class hours per week.

## MA5683 Calculus I (Technical)

A one-semester course; four credit hours. An extension of MA5661 into the field of calculus. Applications of calculus to problems of relative rates, curve tracing, maximum, minimum, area, volume, etc. Four class hours per week.

Prerequisite: MA5652

## MA5684 Calculus II (Technical)

A one-semester course; four credit hours. The calculus of scalar and vector products, solid analytical geometry, partial derivatives, series expansions, DeMoivre's Theorem, L'Hospital's Rule, etc. Four class hours per week.

Prerequisite: MA5683

## MA5685 Differential Equations

A one-semester course; four credit hours. Fundamentals of ordinary linear differential equations, LaPlace Transforms, numerical methods of solutions, etc. Four class hours per week.

Prerequisite: MA5683

## MA5999 Special Topics in Mathematics

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

## MG6651 Industrial Management

A one-semester course; three credit hours. Overview of manufacturing operations. All aspects of the production function are discussed: capital investment, assembly-line operation, plant location, product design, time study, purchasing and other topics. Three class hours per week.

**MG6652 Time and Motion Study**

A one-semester course; three credit hours. The course deals with the application of methods improvement and work measurement techniques. The use of the stop watch, work sampling and operations charts in terms of application to standard systems. Three class hours per week.

**MG6676 Personnel Management**

A one-semester course; three credit hours. Principles and human relations problems involved in the administration of personnel. Topics include job analysis and specification, recruitment, selection and training, job evaluation, supervision of employees, and salary and wage administration and labor relations. Three class hours per week.

**MK6678 Principles of Marketing**

A one-semester course; three credit hours. Introduction to marketing with emphasis placed on the basic functions and the channels of distribution. The consumer, the market area, and the problems and policies of pricing the product. Three class hours per week.

**MK6679 Advertising**

A one-semester course; three credit hours. Analysis of buying motives and the development of various advertising appeals. Planning, budgeting and testing of phases of the program and the several advertising media. Three class hours per week.

**MK6680 Retailing**

A one-semester course; three credit hours. Basic elements of retail merchandising. Types and organization of retail outlets. Buying, pricing, dollar and unit stock control, sales promotion, and expense budgets. Three class hours per week.

**MK6681 Salesmanship**

A one-semester course; three credit hours. Fundamentals of salesmanship by studying the behavioral aspects of the persuasion process; a systematic approach to selling which the student can use to develop the techniques which fit his own personality and particular situation. Three class hours per week.

**MR6601 Medical Record Science I**

A one-semester course; three credit hours. A brief study of the history of medical records, hospitals, and medicine. An analysis is made of professional ethics, and personal conduct required of medical record personnel. Study is also made of the uses and value of the medical record, and responsibility for the component parts of the medical record, quantitative and qualitative analysis of records, and methods and techniques to facilitate completion of records. The importance of medical record personnel as members of the health-care team is emphasized. Two class hours and one two-hour laboratory period per week.

## MR6602 Medical Record Science II

A one-semester course; three credit hours. Deals with the study of basic principles of compiling statistics for hospitals and other medical facilities. Preparation of reports includes the daily census; analysis of hospital services; monthly, annual and special reports. Methods for recording vital statistics are included. Basic principles in the classification of diseases and operations according to the Standard Nomenclature of Diseases and Operations and the International Classification of Diseases, Adapted. Also included are methods of maintaining the physicians' index; birth, death and emergency registers; and the special types of disease registers. The techniques of assisting medical staff in research projects are included. Two class hours and one two-hour laboratory period per week.

## MR6611 Directed Practice I (Medical Record)

A one-semester course; two credit hours. Directed practice experience in the following areas: admitting procedures, circulation and control of medical records, discharge procedures. One hundred and twenty class hours for the semester.

## MR6651 Medical Record Science III

A one-semester course; three credit hours. Course includes the study of principles of law as related to patient care and medical records; study of medical staff structure within the hospital; study of health accrediting agencies; and the study and practice of medical transcription. Two class hours and one two-hour laboratory period per week.

## MR6652 Medical Record Seminar

A one-semester course; one credit hour. This is a seminar in problem analysis and action in the operation of a medical records department of a hospital or other type of medical facility. The course is designed for students in the final semester and will provide a means of coordinating the final directed practice. One class hour per week.

## MR6660 Directed Practice II (Medical Record)

A one-semester course; four credit hours. Directed practice experience in the following areas: statistics, Coding and Indexing Transcription of discharge summaries and operations. Two hundred and forty class hours for the semester; sixty hours of which is transcription taught on campus.

## MR6666 Directed Practice III (Medical Record)

A one-semester course; three credit hours. Directed practice experience in the following areas: Transcription, Release of Medical Information, Secretarial and Management experience. One hundred and eighty hours for the semester.

## NH6613 Principles of Nursing Home Administration I

A one-semester course; three credit hours. The functioning, forms and financing of nursing homes. Approached from a general overview of community health care with an emphasis on the

role of nursing homes in our society. Exploring the complex of activities found in the institution; the administration of food services, patient care, personnel, buildings, and long-term care. Three class hours per week.

#### NH6614 Principles of Nursing Home Administration II

A one-semester course; three credit hours. The history and current character of institutional care. Organizational structure and functions of typical nursing homes. Long-term care facilities, homes of the aged, and government facilities. Three class hours per week.

#### NH6622 Food Services and Nutrition

A one-semester course; three credit hours. Survey of food quality and services. Study of adequate facilities and equipment for the proper storage, preparation and serving of food for residents and employees. Familiarity with dietary needs of both groups, and understanding of garbage disposal facilities and procedures. Three class hours per week.

#### NH6651 Nursing Home Plant Planning

A one-semester course; three credit hours. Planning, designing and constructing nursing home and small hospital plants. Discussion of sites, materials and contractual processes. Procurement of supplies and equipment. Three class hours per week.

#### NH6652 Medico-Legal Standards

A one-semester course; three credit hours. Study of the rules and regulations administered by the State Department of Public Health. Survey of state and federal requirements in terms of liability and responsibility of nursing homes relative to patients and employees. Three class hours per week.

#### NH6680 Internship (Nursing Home Administration)

A one-semester course; four credit hours. Taken during the final semester of the program. Work experience under a qualified instructor, periodic seminars with college staff, periodic written progress reports, and a written major report by the student. Internship must be taken at an approved institution by arrangement. Four laboratory hours per week.

#### NH6682 Principles of Nursing Home Finance

A one-semester course; three credit hours. Study of health care economics pertaining to specific aspects of health care, the costs and expenditures involved, health prepayments, insurance programs, the impact of social and economic factors on the financial structure of the nursing home. Three class hours per week.

#### NH6684 Principles of Medical Records

A one-semester course; three credit hours. Study of medical history records, report preparation, coding, indexing procedures, ethics, methods of securing and preserving medical records, and medical record practices and procedures. Three class hours per week.

NS6601 Nursing I - Fundamentals of Nursing

A one-semester course; eight credit hours. This course is designed to help the student to develop first an understanding of normal health needs and the basic concepts and skills necessary to render safe and effective bed-side nursing care. Basic mental health concepts and communication skills, nutrition, pharmacology, and the preventive aspect of rehabilitation are introduced. Four class hours and twelve hospital practice hours per week.

NS6602 =Nursing II - Maternal and Child Health Nursing

A one-semester course; eight credit hours. This course provides a study of the knowledge, skills, and attitudes necessary to afford effective care of patients throughout the maternity cycle, the newborn infant and the child from infancy through adolescence. Opportunity is offered to study the psychological development of the child concurrently with the normal physical growth and development. This combination provides an understanding of the total child when he is ill and when he is well. Diet therapy and pharmacology are integrated throughout. Public health and the therapeutic aspect of rehabilitation are introduced. Four class hours and twelve hospital practice hours per week.

Prerequisite: NS6601

NS6651 Nursing III

A one-semester course; eight credit hours. Course provides a study of the patient with physical or mental illness and the nursing knowledge and skills necessary to their effective nursing care. Surgical asepsis, emergency and disaster nursing, and the restorative aspects of rehabilitation are introduced. Communications skills and interpersonal relationships are emphasized. Related diet therapy and pharmacology are integrated. Selected clinical experience. Four class hours and four three-hour laboratory periods per week.

Prerequisite: NS6602

NS6652 Nursing IV - Advanced Medical-Surgical Nursing

A one-semester course; ten credit hours. This course is designed to develop those understandings and skills necessary to the effective nursing care of patients with major medical-surgical problems. Geriatric nursing and the team approach to nursing are introduced, and selected aspects of emergency and disaster nursing are considered. Five class hours and fifteen hospital practice hours per week.

Prerequisite: NS6651

NS6682 Seminar on Nursing

A one-semester course; three credit hours. Course is designed to provide students with an appreciation of the historical development of nursing, the present and future trends in nursing education and practice, and the role of nursing organizations.

Opportunities for, as well as problems and responsibilities of, the registered nurse are discussed. Three class hours per week.

Prerequisite: NS6651

#### PE2293 Physical Education and Recreation Activities

A one-semester course; one credit hour. Study of and participation in games and exercises designed to increase motor ability and group interaction of the young child. Two class hours per week.

#### PH1101 Introduction to Philosophy I

A one-semester course; three credit hours. The aims, nature and problems of philosophy and its methods of inquiry and explanation, such as intuitionism, rationalism, empiricism, and pragmatism. The sources, limitations and validity of knowledge, with particular attention to the positions of Locke, Berkeley, Hume and Kant. Concludes with examination of basic ethical theories. Three class hours per week.

#### PH1102 Introduction to Philosophy II

A one-semester course; three credit hours. Critical analysis of fundamental assumptions, teachings and theoretical and practical implications of the major schools of philosophy, with particular attention to views about God, man, nature and society. Three class hours per week.

#### PH1151 Introduction to Logic

A one-semester course; three credit hours. Course will inquire into the nature of critical thinking. Such topics as the functions of language, experimental truth and logical validity, the structure of deductive arguments, and basic inductive methods will be considered. Three class hours per week.

#### PH1999 Special Topics in Philosophy

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

#### PI5501-PI5502 Physics I and II

A two-semester course; four credit hours per semester. Intended for liberal arts students and some science majors. The course will examine the elements of mechanics, sound, heat, electricity, magnetism and light. Plane trigonometry and algebra will be used. Three class hours and one three-hour laboratory period per week.

Prerequisite: One year of college mathematics

PI5503 Introductory Physics I

A one-semester course; four credit hours. This course is designed to cover concepts in physics which are necessary for a basic understanding of our twentieth century physical world. The treatment will be largely non-mathematical and will cover topics such as relative motion, mass energy relations and atomic structure. Three class hours and one three-hour laboratory period per week.

PI5504 Introductory Physics II

A one-semester course; four credit hours. A continuation of PI5503 with the same objectives, but focussed upon other interesting topics such as heat, light and radiation. Three class hours and one three-hour laboratory period per week.

Prerequisite: PI5503

PI5621 Applied Physics I

A one-semester course; four credit hours. Fundamentals of mechanical motion using algebra and graphical solutions. Principles of heat transfer, wave motion, vibration and sound. Basic fluid mechanics. Three class hours and one three-hour laboratory period per week.

PI5622 Applied Physics II

A one-semester course; four credit hours. Fundamentals of electricity, magnetism, and electrochemical effects. Electromagnetic induction and magnetic properties. Introduction to physical optics, lenses, mirrors and optical instruments. Three class hours and one three-hour laboratory period per week.

Prerequisite: PI5621

PI5623 Engineering Physics I

A one-semester course; four credit hours. To be taken concurrently with MA5621. The principles of mechanics, including composition and resolution of vectors, statics, moments, rectilinear motion, Newton's second law, motion of a projectile, work and energy, impulse and momentum, circular motion, rotational kinematics and dynamics, elasticity, harmonic motion. Three class hours and one three-hour laboratory period per week.

PI5624 Engineering Physics II

A one-semester course; four credit hours. To be taken concurrently with MA5622. Principles of electricity and magnetism. Coulomb's Law, potential, D. C. circuits, the magnetic field, galvanometers, ammeters, voltmeters, wattmeters, the D. C. motor, magnetic field of a current and of a moving charge, induced electromotive force, capacitance and inductance, magnetic properties of matter. Three class hours and one three-hour laboratory period per week.

Prerequisite: PI5501

**PI5651** Engineering Physics III

A one-semester course; four credit hours. To be taken concurrently with MA5683. Heat, sound, and optics, including the following: thermometry, quantity of heat, change of state, work and heat; heat transfer, thermal properties of matter, the first and second law of thermodynamics, wave motion, vibrating systems; acoustical phenomena; the nature and propagation of light; reflection and refraction at a single surface, lenses and lens aberration; optical instruments; illumination, color, and polarized light. Three class hours and one three-hour laboratory period per week.

**PI5999** Special Topics in Physics

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in the discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

**Prerequisite:** An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

**PS1101** Introduction to Psychology

A one-semester course; three credit hours. Survey of the more important areas of psychology. Study of behavior, including maturation and development, emotions, motivation, learning, intelligence, conflict, psychotherapy and perception. Three class hours per week.

**PS1151** Child Psychology

A one-semester course; three credit hours. Study of child development from the behavioral aspect. Motor, speech, social, emotional and play development are emphasized. A research paper on a particular kind of child or on one age level is required. Three class hours per week.

**Prerequisite:** PS1101

**PS1152** Adolescent Psychology

A one-semester course; three credit hours. Study of adolescent development from the point of view of both the adult and the adolescent. The emotional, social, intellectual and other phases of development are considered. Three class hours per week.

**Prerequisite:** PS1101

**PS1153** Educational Psychology

A one-semester course; three credit hours. Major psychological factors in human development related to problems in the school situation; teacher's role in school motivation; conceptual learning, problem solving and the development of emotional behavior, attitudes and values; learning of skills; retention and transfer;

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and measurement of student abilities and achievement. Recommended for students contemplating future study in education or psychology. Three class hours per week.

Prerequisite: PS1101

PS1351 Social Psychology

A one-semester course; three credit hours. The social matrix of individual behavior. The shaping of personality by face-to-face relations with one other, two others, or a group. Why behavior is different in a group. Prejudices as perception. Group influence on masculine and feminine identity. The group and the search for meaning. Three class hours per week.

Prerequisite: PS1101

PS1651 Industrial Psychology

A one-semester course; three credit hours. An introduction to problems of human relations in business and industry. Such problems as selection, placement, conflict, supervision, motivation and cooperation will be examined. The case method will be used extensively. Three class hours per week.

PS1751 Abnormal Psychology

A one-semester course; three credit hours. The study of the etiology, treatment and prevention of mental disorders. Includes study of functional and organic psychoses, psychoneuroses, and borderline maladjustments. Three class hours per week.

Prerequisite: PS1101

PS1999 Special Topics in Psychology

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

PS6551 Gerontology

A one-semester course; three credit hours. The unique physical and mental characteristics and problems of the elderly with which administration of nursing home facilities should be familiar. Three class hours per week.

RT6511 Radiologic Science I

A one-semester course; three credit hours. Designed to examine the fundamentals of physical principles of electrical and x-ray physics, and the operational study of x-ray equipment and auxiliary devices. The course will examine fundamental and derived

units, mechanics matter, magnetism and electricity, electromagnetism, generators, motors and transformers. Three class hours per week.

#### RT6512 Radiologic Science II

A one-semester course; three credit hours. Emphasis will be placed on the formation of ionizing radiation by further analysis of x-ray and other types of circuits, tubes, etc., laws of motion, thermal considerations, optics and lens systems, and radioactivity. Three class hours per week.

Prerequisite: RT6511

#### RT6517 Radiologic Orientation I

A one-semester course; four credit hours. This course will offer a comprehensive and detailed study of the history of x-ray technology and radiology, medical ethics, elementary radiation protection, medical terminology, darkroom chemistry, basic principles of radiographic exposure, preliminary radiographic positioning and radiographic osteology. Emphasis will be placed on the understanding of radiologic technology and its place in the hospital setting. Two two-hour classes and one one-hour class per week.

#### RT6518 Radiologic Orientation II

A one-semester course; four credit hours. This course will continue basic positioning, radiographic exposure, and their interrelated principles. An evaluation and study of the use of contrast media. Nursing procedures related to radiology and radiologic technology, pediatric positioning will be considered. Two two-hour classes and one one-hour class per week.

Prerequisite: RT6517

#### RT6519 Hospital Practicum

A ten-week summer course; two credit hours. An interrelated aspect of Radiologic Orientation I and II. The student will apply, under direction and supervision, the principles of radiologic technology. Emphasis will be placed on visual demonstration of the principles and concepts of positioning, exposure, and related topics. Film critique will be an integrated part of the hospital phase. Activities will be under the direction of the college and the participating hospitals.

Prerequisite: Must be taken concurrently with  
RT6517 and RT6518

#### RT6551 Radiologic Technology I

A one-semester course; three credit hours. The following subjects will be examined in detail: a continuation of radiographic positioning, advanced radiographic positioning, radiologic osteology. Three class hours per week.

Prerequisite: RT6518

RT6552 Radiologic Technology II

A one-semester course; three credit hours. The following subjects will be studied in detail: intro-oral radiography, a survey of medical and surgical diseases, departmental administration, equipment maintenance. Three class hours per week.

Prerequisite: RT6551

RT6552A Hospital Practicum

A concurrent aspect of Radiologic Technology I and II. The student will apply, under the direction and supervision of the affiliate hospitals, principles learned in the classroom. Emphasis will be placed on solidification of theoretical knowledge in the hospital setting. Activities will be under the direction of the college and the liaison instructor in the affiliate hospitals.

Prerequisite: Must be taken concurrently with RT6551 and RT6552

RT6561 Principles of Radiologic Technique I

A one-semester course; four credit hours. The student will study radiographic exposure, radiation protection, and special procedures as they relate to radiology and radiologic technology. Three two-hour classes per week.

Prerequisite: RT6517

RT6562 Principles of Radiologic Technique II

A one-semester course; four credit hours. This course will study in detail the principles of radiation therapy, radioactive isotopes and film critique. Three two-hour classes per week.

Prerequisite: RT6561

RT6601 Respiratory Therapy I - Oxygen Therapy

A one-semester course; three credit hours. Overview of the field of respiratory therapy with emphasis on basic knowledge of the historical aspects of oxygen, its manufacture, governmental regulations, safety precautions, flow regulation devices with indications and procedures for the use and administration of oxygen equipment. Three class hours per week.

RT6602 Respiratory Therapy II - Aerosol Therapy/Pharmacology

A one-semester course; three credit hours. Theory and procedures of humidity and aerosol therapy, including an investigation into the devices currently employed in the field, and a survey of aerosol agents, and the pharmacological theory involved. Three class hours per week.

RT6607 Seminar for Technicians

A one-semester course; three credit hours. An evaluation and discussion of current topics in inhalation therapy including the presentation of original papers. The course is also de-

signed to prepare the student for his clinical internship, and includes an intensive review of the fundamentals of inhalation therapy as preparation for technician certification. Three class meetings per week.

#### RT6613 Respiratory Therapy III - Ventilating Management

A one-semester course; four credit hours. Ventilation and emergency therapy, including all types of ventilators and their classification, units for home use, and the principles and procedures of cardio-pulmonary resuscitation. Three class hours and one three-hour laboratory period per week.

#### RT6614 Respiratory Therapy IV - Equipment Maintenance

A one-semester course; four credit hours. Care and maintenance of equipment: cleaning and sterilization, organization and administration of an inhalation therapy service and a consideration of ethics as applied to the role of the inhalation therapist in working with the patient, the nurse and the physician. Three class hours and one three-hour laboratory period per week.

#### RT6615 Respiratory Physiology

A one-semester course; three credit hours. Course will present an in-depth analysis of pulmonary circulation and gas diffusion; transport of oxygen and carbon dioxide; response to hyperoxygen ions; as well as clinical manifestations of pulmonary disease. Three class hours per week.

#### RT6616 Clinical Spirometry

A one-semester course; three credit hours. Course will cover evaluation and interpretation of vital capacity, maximal breathing capacity and timed vital capacity as applied to analysis and recognition of obstructive and restrictive lung disease. Three class hours per week.

#### RT6617 pH and Blood Gas Analysis

A one-semester course; three credit hours. Comprehensive study of Blood Gas Parameters, with special emphasis on a meaningful interpretation of results as applied to Respiratory Intensive Care. The course will culminate in a one-week equipment trouble-shooting seminar at Instrumentation Laboratory, Lexington, Massachusetts. Three class hours per week.

#### RT6618 Respiratory Intensive Care

A one-semester course; four credit hours. Emphasis will be placed on mechanical competence with both volume and pressure limited ventilators, trouble-shooting all equipment, including accessory apparatus, and the development of confidence and clinical acumen when dealing with critical situations. Three class hours and one three-hour laboratory period per week.

RT6621-RT6622 Seminars I and II (Inhalation Therapy)

A two-semester course; three credit hours per semester. An evaluation and discussion of current topics in respiratory therapy, including the presentation of original papers. Three class hours per week.

SC5011 Man and His Environment

A one-semester course; three credit hours. Study of the ecology of the ape, primitive man, and the cultured and urbanized man of today. The study of the progressive deterioration of man's balance with the rest of nature, showing the way man has to change his psychological attitudes in order to implement and develop new technical solutions. The study of the technical solutions necessary to solve the three major problems of today: overpopulation, inadequate resources and pollution. Three class hours per week.

SC5511-SC5512 Physical Science I and II

A two-semester course; four credit hours per semester. An integrated course which considers the basic principles of the physical universe, including the study of the composition of substances, the atmosphere, synthetics, the earth, and the universe, in an effort to develop an understanding of the relationship of the sciences to everyday life. Three class hours and one two-hour laboratory period per week.

SC5503 Integrated Science I

A one-semester course; three credit hours. Emphasis is placed on chemistry, physics and microbiology. The human body as a whole, the skin, the skeletal system, and the muscular system are studied. Three class hours per week.

SC5504 Integrated Science II

A one-semester course; three credit hours. Emphasis is placed on the bodily systems, metabolism, nutrition, reproduction, genetics, the eye, and the ear in particular. Three class hours per week.

SC5599 Research Topics in Science

An open-ended investigatory course with credits varying from one to three hours. Designed for the advanced student who is interested in a career in the sciences. The student will work on a topic of his choice under the direction of one faculty member. Topics available include areas in the biological, earth and physical sciences. Interested students should obtain a list of faculty members showing their areas of specific interest and then consult with the faculty member of his choice before registering for the course. Limited to one semester. THIS COURSE DOES NOT FULFILL THE SCIENCE REQUIREMENTS FOR GRADUATION.

Prerequisite: Permission of the instructor.

**SC5999 Special Topics in Science**

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

**Prerequisite:** An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

**SH6621 Shorthand I**

A one-semester course; three credit hours. Gregg shorthand principles, including the shorthand alphabet, brief forms, phrasing, and other abbreviating devices. Development of the ability to take dictation on practiced material at 60 to 80 words per minute. Study of the non-shorthand elements of spelling and punctuation. Four class hours per week.

**SH6622 Shorthand II**

A one-semester course; three credit hours. Reinforcement of shorthand principles, development of ability to take new matter dictation at 60 to 80 words per minute, and procedures and methods for handling simple office-style dictation problems. Four class hours per week.

**Prerequisite:** SH6622 or equivalent

**SH6641 Technical Stenography**

A one-semester course; three credit hours. Study of shorthand for technical terms, phrases, and abbreviations peculiar to each technical field and to develop the ability to devise technical shorthand outlines. Preparation of technical reports with a proficiency in proofreading and exactness of work. Three class hours per week.

**Prerequisite:** SH6622 and TW6622

**SH6643 Technical Dictation and Transcription**

A one-semester course; three credit hours. Development of ability to take dictation at speeds from 90 to 120 words a minute on technical materials and to transcribe accurately. Emphasis is placed on the transcribing problems peculiar to the technical field. Five class hours per week.

**Prerequisite:** SH6671 and SH6641

**SH6671 Shorthand III**

A one-semester course; three credit hours. Development of ability to take dictation speeds at the 80 to 100 work levels. Emphasis is placed on the mechanics of English including spelling and punctuation and the growth of effective transcribing techniques. Five class hours per week.

**Prerequisite:** SH6622 and TW6622 or equivalent

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SH6672 Shorthand IV

A one-semester course; three credit hours. Development of shorthand skill at the 100 to 120 work levels. Reinforcement of previously learned typing and shorthand skills to improve accuracy and speed of transcription. Advanced office-style procedures. Five class hours per week.

Prerequisite: SH6671

SH6677 Medical Dictation and Transcription

A one-semester course; three credit hours. Development of the shorthand vocabulary necessary to write from dictation and to transcribe medical dictation. Practice in preparing various kinds of medical reports. Five class hours per week.

Prerequisite: SH6671 and HS6601

SH6679 Legal Stenography

A one-semester course; three credit hours. Development of a basic legal shorthand vocabulary. Study of the duties and responsibilities of the legal secretary in a law office. Three class hours per week.

Prerequisite: SH6622 and TW6622

SH6691 Legal Dictation and Transcription

A one-semester course; three credit hours. Development of the ability to take rapid legal dictation and to transcribe accurately. Students are required to type in correct legal format and be familiar with the use of legal instruments and documents. Study of the maintenance of a law library and typical law office procedures. Five class hours per week.

Prerequisite: SH6679

SK6651 Office Machines

A one-semester course; one credit hour. Development of the basic skills needed to operate duplicating equipment, photocopy equipment, adding machines, calculators, and transcribing machines. Two class hours per week.

Prerequisite: TW6622

SK6653 Machine Transcription

A one-semester course; three credit hours. Development of high-level skills in the use of transcription equipment. Emphasis is placed on the use of business, professional, and technical materials. Development of vocational transcription rates. Four class hours per week.

Prerequisite: TW6622

SK6655 Medical Machine Transcription

A one-semester course; three credit hours. Introduction to machine transcription and development of a medical vocabulary.

Development of vocational competence in medical transcription.  
Four class hours per week.

Prerequisite: TW6622 and HS6601

#### SL6661 Secretarial Procedures I

A one-semester course; three credit hours. Theory and problems in office and records management, selection and maintenance of office supplies and equipment, dictation and transcription procedures, composition of business letters, processing of mail, and postal and shipping services. Three class hours per week.

Prerequisite: TW6622 and SH6622

#### SL6662 Secretarial Procedures II

A one-semester course; three credit hours. Receptionist and telephone techniques, and handling travel arrangements. Preparation of business reports, statistical charts and graphs. Secretarial responsibilities for banking, insurance, investment and payroll services. Three class hours per week.

Prerequisite: TW6622 and SH6622

#### SL6665 Administrative Secretarial Procedures

A one-semester course; three credit hours. Development of judgments and insights needed by the executive secretary to function on the administrative or supervisory levels. Analysis of long-range office projects, determination of work priorities, organization of research information, and the place of human relations in the supervisory process. A case-study approach to the problems of office supervision. Three class hours per week.

Prerequisite: SL6661

#### SL6668 Secretarial Field Experience

A one-semester course; three credit hours. Students are assigned to offices on the basis of interest and ability so that they may become a part of the business world before graduation. The student is supervised at the college by the departmental faculty and at work by the employer. One class hour, eight office hours per week.

Prerequisite: SH6671 and TW6631

#### SL6680 Medical Secretarial Procedures

A one-semester course; three credit hours. Theory and problems in the management of the medical office including filing, making appointments, completing medical forms, telephone techniques, medical bookkeeping, and dictation and transcription procedures related to the medical office. Three class hours per week.

Prerequisite: SH6677

SO3320 Introductory Anthropology

A one-semester course; three credit hours. To acquaint students with concepts, principles and major areas of anthropology. Physical anthropology: a synopsis of the evolution of man and his racial classification; cultural evolution: development and characteristics of early cultures; ethnology: the study of selected non-literate and contemporary peasant societies. Three class hours per week.

SO3321 Principles of Sociology

A one-semester course; three credit hours. Study of the social order, and of human behavior as motivated and influenced by group membership, and by culture. Analysis of structure and functions of the major social institutions. Three class hours per week.

SO3331 Marriage and the Family

A one-semester course; three credit hours. Examination of marriage and the family from a social-psychological point of view. Consideration of such areas of adjustment as emotional, physical, social, financial, religious and legal. Three class hours per week.

Prerequisite: SO3321

SO3333 Contemporary Social Problems

A one-semester course; three credit hours. Analysis of the origins, extent, and significance of contemporary social problems. The course will be concerned with changes in social patterns and trends, with emphasis on the causes of group disintegration and reorganization. Three class hours per week.

Prerequisite: SO3321

SO3999 Special Topics in Sociology

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in the discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

SP4401-SP4402 Introductory Spanish I and II

A two-semester course; three credit hours per semester. For students who have not completed two years of high school Spanish or the equivalent as determined by the college. Audio-lingual emphasis. Introduction to grammatical patterns, reading and writing. Three class hours per week.

## SP4451-SP4452 Intermediate Spanish I and II

A two-semester course; three credit hours per semester. For students who have completed two or more years of high school Spanish or the equivalent as determined by the college, or who have completed SP4401 and SP4402. A continued study of language skills, emphasizing the development of reading ability. Three class hours per week.

## SP4999 Special Topics in Spanish

A one-semester course; three credit hours. Directed readings, directed research or seminar in specific topics in the discipline. Syllabus to be approved by department and division chairmen prior to registration. Three class hours per week or equivalent.

Prerequisite: An interview which demonstrates a working knowledge of fundamentals of the discipline sufficient for the project and permission of the instructor.

## TW6621 Typewriting I

A one-semester course; three credit hours. Foundation course for vocational typewriting. Development of correct basic typewriting skill. Introduction to short business and personal letters, tables, reports, and other typewriting applications. Four class hours per week.

## TW6622 Typewriting II

A one-semester course; three credit hours. Development of requisite typing skill, experience, and knowledge expected of a typist new to office employment. Development of ability to make basic editorial corrections and to type manuscripts, business forms, tabulations, and correspondence. Four class hours per week.

Prerequisite: TW6621 or equivalent

## TW6631 Typewriting III

A one-semester course; three credit hours. Extension of typewriting skill to higher performance levels. Emphasis on typing unfamiliar and unarranged kinds of materials. Statistical typing. Production typewriting. Four class hours per week.

Prerequisite: TW6622 or equivalent

## TW6632 Typewriting IV

A one-semester course; three credit hours. Mastery of ability to produce rapidly long manuscripts related to reports, magazine articles and speeches. Development of the ability to compose correspondence and edit the business writings of others. Production typewriting with the development of vocational rates of speed. Four class hours per week.

Prerequisite: TW6631

TW6641 Technical Typewriting

A one-semester course; three credit hours. Correct use and spelling of scientific terminology. Development of skill in typing technical and engineering correspondence, reports, rough drafts, and manuscripts which contain various mathematical and chemical equations. Four class hours per week.

Prerequisite: TW6631

THE COLLEGE RESERVES THE RIGHT  
TO ADD OR SUBTRACT CURRICULA OR  
COURSES. COURSES WHICH WILL BE  
OFFERED DURING A GIVEN SEMESTER  
IN THE DAY DIVISION OR DIVISION  
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